This volume examines the notions of grammar, rule, and derivation with reference to the Aṣṭādhyāyī as a grammatical device. An attempt has been made to clearly outline and illustrate the basic constructs of the Pāṇinian linguistic theory especially as they relate to the traditional views on the one hand and modern linguistic orientations on the other. A developmental history of the Pāṇinian school focusing on major texts and trend along with a detailed treatment of rule-types, paribhāṣās, and samāsas, complement the discussion of derivational mechanism and related conventions.

This book is reprint edition of vol. I, with a translation of rules in the Index and an updated bibliography. In the meantime five volumes have already been published and the concluding volume six will be published soon. Vols. II-VI contain the text of the Aṣṭādhyāyī with English translation, explanatory notes and complete derivational history of all forms cited as examples by the Kāśikāvṛtti
Rama Nath Sharma is Professor of Sanskrit at the University of Hawaii at Manoa, Honolulu, Hawaii, USA. He received his Ph.D. (1971) in General Linguistics from the University of Rochester where he also taught Linguistics for five years. His research interest includes grammatical theory in general, and Pāṇini and the Indian grammatical tradition, in particular.
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THE ĀŚṬĀDHYĀYĪ OF PĀṆINĪ

VOL. I

INTRODUCTION TO THE ĀŚṬĀDHYĀYĪ
AS A GRAMMATICAL DEVICE

RAMA NATH SHARMA

University of Hawaii

Second revised and enlarged edition
with Index of Sūtras (translated and explained)

Munshiram Manoharlal
Publishers Pvt. Ltd.
In memory
of my mother

Second revised and enlarged edition 2002
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Preface to the Second Edition

I am happy to see this reprint edition of volume one, *The Aṣṭādhyāyī of Pāṇini*, Introduction to the Aṣṭādhyāyī as a Grammatical Device. I had promised to prepare an enlarged edition of this study with additional details on scanning conventions and traffic rules but, mostly due to preparation of other volumes, I could not keep this promise. I do not think it will be possible for me to go back to it in the near future. There are still many other projects which I must complete. But since my presentation of derivational system still makes sense, and also since it could still be used to the benefit of understanding of Pāṇinian system of derivation, I am in favor of bringing this reprint edition. Pāṇini has become very popular in contemporary linguistics, computation and artificial intelligence. The Director of a German institute where they are working on computer application of Pāṇini, considers this volume the best available in the market. I have updated the bibliography and have added translations of rules in the index. I hope my readers will find this addition useful.

I would like to thank Christopher Bopp for preparing the index. Mr. Devendra Jain, Director of Munshiram Manoharlal Publishers, gets most credit for bringing out this reprint edition at such a short notice. I shall appreciate it very much if my readers write to me about the contents of this volume.

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1 December 2001
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Preface to the First Edition

This book is a development of one basic assumption: that the *Aṣṭādhyāyī* of Pāṇini is a grammatical device which consists of a limited number of ordered rules capable of deriving an infinite number of correct Sanskrit sentences. This, essentially, is the assumption that modern linguists make about grammatical devices. However, the Pāṇinian device is in many ways unique. I have tried to present the basic mechanisms of this device by focusing upon how they actually operate in the derivation process.

Since there is considerable literature dealing with the nature, language and principles of the *Aṣṭādhyāyī*, and also since a comprehensive treatment of them is soon to be completed by George Cardona, I have strived to refrain from duplication. As already stated, my approach is different. However, certain topics had to be included, the discussion about kārakas in chapter 9, for example. Chapters 1 and 2 are provided by way of background. The remaining chapters, in one way or another, complement or illustrate my basic hypothesis. Chapter 7 presents a listing of the Pāṇinian definitions and interpretations. Such a listing is provided for quick reference. Chapter 8 presents some additional interpretive rules, which, although not explicitly stated in the *Aṣṭādhyāyī* are essential for properly comprehending its derivational mechanism. These interpretive rules have been selected from the *Paribhāṣenduśekhara* of Nāgeśa based upon their importance for my study. This chapter is also essentially a reference chapter. Chapter 11 presents a detailed description of Sanskrit compounds which is designed to show how my proposals are fully applicable to an important derivational type.

My orientation towards Pāṇini is basically linguistic, in the sense that I try to look at the *Aṣṭādhyāyī* in view of questions which are often asked in modern linguistics, especially in the area of formulation, interpretation, order and application of rules. However, since I have relied heavily upon the traditional interpretations, instances accepting the traditional rather than the contemporary view are numerous. My rather critical attitude towards certain recent writings should not be looked upon as an effort on my part to diminish their importance; my motive in all cases has been to put them in proper perspective. There are features in Pāṇini which one may be tempted to identify with features outside Pāṇini. My position on such identification is that Pāṇini is what Pāṇini is. Any attempt to interpret the *Aṣṭādhyāyī* in the light of some particular contemporary linguistic
theory risks compromising Pāṇini. Finally, it should be understood that my ideas, though I have tried to present them clearly, are not the final word. There is still a great deal of work to be done. For example, the derivational conventions which I propose, need further refinement.

I am honored to have had the opportunity of studying extensive passages from the traditional texts with my father, Pandit Raghunath Sharma. Pandit Ramaprasad Tripathi, and my younger brother Narendra — both of the Sanskrit University, Varanasi — were most helpful in bringing certain of my ideas into better focus. I am indebted to Professor O.L. Chavarra-Aguilar for leading me into Pāṇinian studies. I will be failing in my duties if I did not mention that I have benefited, above all, from the writings, which include unpublished manuscripts and personal communications, of Professor George Cardona of the University of Pennsylvania. Cardona has constantly served as an important source of reference and insight. Of course, I take full responsibility for any errors I may have made in this book.

Thanks are also due to the University of Hawaii, its Research Council and the Department of Indo-Pacific Languages, especially to its chairman, D. Haigh Roop, for facilitating my research through grants and sabbatical leave. The American Institute of Indian Studies has been very supportive of my research endeavors on Pāṇini. I am grateful for their grant under which I finished the writing of this volume.

This book is being published as volume one of a projected five-volume study. Subsequent volumes will include the text of the Aṣṭādhyāyī with English translation, explanatory notes and complete derivational history of all forms cited as examples by the Kāśikāvṛtti. Finally, I must thank Stanley Schab, my research assistant, for not only editing and typing the manuscript but also for making some very valuable comments.

gahanataragranthārthān ativitatān viksya maṅkṣu saṃkṣiptām / skhalitam api sambhaven nas tatra vibudhā vimatsarāḥ śaraṇam //

Prakriyāsarvasva (I:79) of Nārāyaṇabhaṭṭa

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Abbreviations

AD aīga domain
CD controlling domain
CS conceptual structure
D dhātu
DP dhātupāṭha
Ed. editor
FC functional context
FSG finite state grammar
GP gaṇapāṭha
Kāś Kāśikā, Kāśikāvṛtti of Vāmana-Jayāditya
Lā lingānuśāsana
Mbh Mahābhāṣya, Vyākaraṇa-mahābhāṣya of Patañjali
OD obligatory domain
P prātipadika
PD pada domain
Phs Phīṭ-sūtra
PK Prakṛtyā-kaumudi of Rāmacandra
PM Padamañjari of Haradatta
PLM Paramālaghumañjūśā of Nāgeśa
PS Paribhāṣenduśekhara of Nāgeśa
RI referential index
RV Rgveda
SK Siddhānta-kaumudi of Bhaṭṭoji Dikṣita
SP sūtrapāṭha
Śs Śiva-sūtra
TG transformational grammar
tr. translator
Us Uṇādi-sūtra
vol volume
\ VP Vākyapāḍīya of Bhartṛhari
1

Pāṇini and the Pāṇinīyas

A great deal of literature already exists on the developmental history of the Pāṇinian school of grammar. Recently, George Cardona (1976) presented an excellent study surveying this literature. Cardona not only provides the most comprehensive bibliography to date, but also judiciously examines major issues with reference to varying views and offers his own conclusions. My aim here is to present a general developmental history focusing on the major texts, their relationships, characteristics and style. While relative chronology will still be maintained, the focus will shift from chronology and relevant evidence to texts and trends. The date and time of various grammarians will not be discussed.¹

The grammatical literature consists of sūtra ‘rule’, vṛtti ‘gloss’, vārttika ‘note’, bhāṣya ‘exposition’, prakriyā ‘derivation’ and siddhānta ‘theory’. A sūtra, literally a thread, is a formulaic statement which presents a rule of grammar in a laconic style which emphasizes brevity, although certainly not at the expense of clarity. A vṛtti, technically, dwells upon a sūtra and is rendered in the form of a statement paraphrasing a rule by supplying understood or missing elements. A vārttika is a statement of an intermediate level between a sūtra and a vṛtti rendered with the express purpose of examining what has or has not been stated, or has been poorly stated, by a sūtra.² A bhāṣya can be characterized as a detailed exposition (vyākhyāna) of a sūtra, along with corresponding vārttikas, structured in the style of illustration using examples (udāharaṇa) and counter-examples (paryudāharaṇa). It seeks to supply any missing links (vākyādhyāhāra).³ Prakriyā normally represents the applied aspect of a sūtra in the sense that it focuses on the derivation of forms. It should be noted that though prakriyā focuses on examples and operations, it may also offer vṛtti and exposition, though these latter only complement the rule application. The siddhānta literature focuses on the formulation and exposition of basic theoretical issues. Thus, these treatises will assume vṛtti, vārttika and prakriyā unless these latter become crucial to the issues on hand. Except for the sūtras, all the other categories jointly constitute what is generally referred to as the commentarial literature.

¹ The dates cited here are approximations generally accepted by scholars.
² uktānuktaudṛuktānāṁ cīntā yatra pravarttate /
   tam grantham vārttikam prāhur vārttikajñā maniṣṇaḥ //
³ Mbh. 1:43.
As is the standard practice, a commentary must have its *pratika* ‘symbol, unit of focus’. Thus, a *vr̥tti* accepts a *sūtra* as its unit of focus. A *bhāṣya* treats a *vārttika* as its unit of focus. When it comes to *prakriyā*, operational topics and examples serve as *pratika*. For a treatise on *siddhānta*, it is a theoretical issue which constitutes the unit of focus. A commentary on *vr̥tti* will similarly treat a particular element of the *vr̥tti* as its *pratika*. The *pratikas* are often helpful in identifying specific issues. They also ensure that commentaries remain to the point. Given the idea of *pratika*, one can easily discern the interrelationship among these forms of literature. The relationship between a *sūtra* and *vr̥tti*, a *vārttika* and *bhāṣya*, a *bhāṣya* and *siddhānta* and a *vr̥tti* and *prakriyā* thus becomes closely established. I shall illustrate this further when I discuss each individual type. Suffice it to say here that a commentary needs a focus.

Pāṇinians accept the *Aśṭādhyāyī* as the most important text representing the *sūtra* form of literature. It is commonly referred to as the *Aṣṭaka* ‘collection of eight’, or the *Sūtrapāṭha* (*SP*) ‘recitation of *sūtras*’. It consists of nearly four thousand *sūtras* presented in eight chapters (*adhyāya*) of four quarters (*pāda*) each. Reference to a *sūtra* is made by following the convention *b.q.n.* where *b.q.n.* represent the book, quarter and *sūtra* number respectively. The first *sūtra* of the first quarter of the first book, then, will be 1.1.1.

The only extant full-length *vr̥tti* on the *SP* is the *Kāśikāvr̥tti* (*Kāśikā*) of Jayāditya and Vāmana (AD 7). The *vārttikas* of Kātyāyana (3 BC) generally constitute the *vārttika* literature. They are available as part of the *Vyākarana-Mahābhāṣya* (*Mahābhāṣya*; *Mbh.*) of Patañjali (2 BC) which, on its own merit, is accepted as the single most important commentary in the tradition. The *prakriyā* tradition begins with the *Rūpāvatāra* of Dharmakirti (AD 11) and, through the *Prakriyākaumudi* (*PK*) of Rāmacandra (AD 14), reaches its peak in the *Siddhāntakaumudi* (*SK*) of Bhaṭṭoji Dikṣita (AD 16). In addition to the *Mahābhāṣya*, which is indispensable for the understanding of any aspect of the Pāṇinian *sūtras*, the *siddhānta* treatises basically constituted by the *Vākyapādiya* (*VP*) of Bhartṛhari (AD 5), *Vaiyākaraṇasiddhāntakārikā* of Bhaṭṭoji Dikṣita, *Vaiyākaraṇabhūṣana* of Kauṇḍabhaṭṭa⁴ (AD 17) and *Vaiyākaraṇasiddhāntakārikā* of Nāgeśabhaṭṭa (Nāgeśa; AD 17-18) which has both a short and very short (*laghu; paramalaghu*) version. Pāṇinī, Kātyāyana and Patañjali are called the three sages (*trimuni*) of grammar. According to the dictum of *yathottaraṁ muninām prāmāṇyam*, each subsequent sage enjoys relatively greater authority (*prāmaṇa*), making Patañjali supreme authority in matters pertaining to Pāṇinī.

I shall now present a general description of each type of literature mentioned above. Before we proceed, however, I must state my intention of not discussing the *siddhānta* literature. I so limit my discussion since *(i)* many

⁴ Note that Kauṇḍabhaṭṭa also wrote a commentary, the *Vaiyākaraṇabhūṣana*, on the *Vaiyākaraṇasiddhāntakārikā* of Bhaṭṭoji Dikṣita.
aspects of the siddhānta literature already will be covered by my discussion of other forms; (ii) even a general discussion on siddhānta treatises would require much space and (iii) their content, especially that of the VP of Bhartṛhari, would take us far afield as they discuss aspects of grammatical theory by bringing ideas from metaphysics, philosophy, epistemology, logic and ritual.

The SP of the Aṣṭādhyāyī essentially was handed down to us through oral tradition. It is remarkable that the text, except for a few variant readings and interpolations, has remained intact, at least regarding its function. Variations in the SP are caused primarily by

1. their transmittal through oral tradition;
2. their acceptance by the authors of vṛtti (vṛttikāras) in one form or another;
3. recitation of certain sūtras by Pāṇini in different forms;
4. treatment of vārttikas, or parts therefrom, as a sūtra or its part;
5. inclusion of a sūtra as part of a gana 'list of nominals in a group'; and
6. acceptance of interpretation or listing of sūtras found outside the Pāṇinian school.

It is claimed by Śrīśacandra Cakravartī (1919),5 based on a verse cited in the preface of his edition of the Nyāsa, commentary by Jinendrauddhi on Kāśikā, that the total number of sūtras which none other than Pāṇini himself composed comes to 3,996. The total number of rules in the Kāśikā comes to 3,981. The additional fifteen rules are accounted for by accepting as rules atha sadbānusāsanam, the first aphorism of the Mahābhāṣya, and the fourteen Śivasūtras (Śs), rules which present the inventory of sounds in the order most conducive to forming and manipulating abbreviatory terms (pratyāhāra; see chapter 2 for details).

There are compelling reasons to believe in the Pāṇinian authorship of the Śs. Yudhiṣṭhira Mimāṃsaka (1973:209-11) effectively demonstrates that atha sadbānusāsanam is the opening aphorism of the Aṣṭādhyāyī. The total number of sūtras according to the SK of Bhaṭṭoji Dīkṣita is 3,976. The five-rule difference from Kāśikā is due to the omission in the SK of four rules from the fourth quarter of the fourth book and one rule from the fourth quarter of sixth book. The exact number of sūtras of the Aṣṭādhyāyī thus varies. Śrīnāraṇya Miśra (1969:49-54) discusses fifty-three rules with corresponding variations in the Kāśikā, Mahābhāṣya and SK. Yudhiṣṭhira Mimāṃsaka (1973, II), and subsequently Bhattacharya (1966), have presented a list of variants. Bhattacharya also discusses why some of the variant readings are unacceptable as well as what may constitute a clue in figuring out which rules may be pre-Pāṇinian.

I shall now present some basic features of the SP which have been discussed in detail elsewhere in this volume. The Aṣṭādhyāyī is a grammar

5 trīṇī sūtrasahasrāṇī tathā navatatāni ca saṃvataṁ ca sūtrakām pāṇinīḥ krāvān svayam.
(vṛyākaraṇa), and like all grammars, it too has a goal (lakṣya): to systematically analyse the correct sentences (vākya) of the Sanskrit language, both the classical as well as Vedic, by means of its sūtras (lakṣaṇa). This analysis is presented by first identifying the constituent words (pada) of a sentence and then subjecting them to an analysis in terms of bases (prakṛti), affixes (pratyaya) and operations (kārya) relative to emergent structures. This conceptual division of a sentence into paddas underlying bases and affixes as well as operations applicable to emergent structures does not have any existence outside the world of grammar. It is strictly a product of the grammarian's own imagination (kalpanā; see chapter 3 for details). The object of this analysis, however, must be real. A grammarian presents the description of sentences existing in usage in the outside world. His lakṣaṇa, as a consequence, becomes subservient to lakṣya. Pāṇini is no exception to this. It is because of this that the tradition recognizes him not as karttā 'creator' but as smartā 'one who recalls'. That is, he does not create sentences but recalls them from usage. The relationship between grammar and usage is discussed in chapter 3.

A grammarian may have control over lakṣaṇa but certainly not over lakṣya. Since the means (upāya) of analysis is strictly the grammarian's own imagination (kalpanā), a possibility of varying sets of grammar cannot be ruled out. The quality of such grammars, however, has to be judged on the basis of how well they perform their function. The Aṣṭādhyāyī has been adjudged the best grammar ever written for any language. Leonard Bloomfield calls it "one of the greatest monuments of human intelligence." It should be remembered, however, that the excellence it achieved must be interpreted as the culmination of a very rich grammatical tradition.

In order to analyse Sanskrit sentences, Pāṇini presents the conceptual structure (CS) of sentences in which abstract syntactic categories and grammatico-semantic relations are identified. The process of lexicalisation, and operations on emergent structures, then follows. What is derived as a result is a correct sentence of the Sanskrit language. Mention must also be made here that Pāṇini manipulates the derivation of words as a tool for deriving sentences (see chapter 3 for details). He also restricts his analysis to form only; meaning has been treated by grammarians as falling outside the derivational competence of grammar. Whatever description of meaning is available in the Aṣṭādhyāyī is complementary to its goal and is provided largely in order to distinguish derivates. Again, such meanings are attested by usage, which is only logical since the grammar believes in the authority (prāmāṇya) of usage (loka).

7 Language (1933:11).
Now a few observations about rules. A sūtra is brief in form and precise in function. Proper understanding of both form and function is determined by context (prakāraṇa). Context can be viewed as twofold: physical and functional though the overriding issue in both is function. Physical context refers to placement of rules in particular places. Rules sharing a physical or functional context are said to be related. Since a sūtra is a formulaic statement, physical context helps its interpretation via anuvṛtti ‘recurrence’ and relative order, etc. It is well known that Pāṇini puts his sūtras in sets or blocks. The relative order of a sūtra in a set, or the order of sets within the grammar, underlies a relationship among sūtras which is crucial to the Pāṇinian derivational mechanism. For example, Pāṇini formulates his rules in view of general (sāmānyā), particular (viśeṣa) and residual (śeṣa) relationships. A particular rule is said to carve out its domain of application from within the domain of its corresponding general rule. In this sense, a particular rule is treated as an exception (apavāda) to its related general rule and consequently blocks its application. A residual rule covers whatever has not been covered by the general or related exceptions. The process of reference and anuvṛtti is discussed in chapter 4; the types of rules and their hierarchical arrangement in chapters 5 and 6.

A rule is formulated to apply. That is, no rule is regarded as being completely without scope of application. A rule which is in danger of becoming vacuous (vyarthā), blocks the application of the rule with valid scope of application elsewhere (see chapter 3 for details). This is the general position. However, in view of the complexity of the language as well as the derivational mechanism, more formulations are required to outline the relative strength of sūtras. Thus, if two rules become simultaneously (yugapada) applicable to a single context and both rules have valid scope of application elsewhere, the rule which is subsequent (pāra) in order of enumeration blocks the application of a prior (pūrva) rule (1.4.2 vipratisedha . . ). Exceptions have also been made in cases where a particular rule does not block its general counterpart obligatorily (3.1.94 va’ sarīpo’ striyām) or where application in turn (paryāya) is permitted (3.1.96 tavyat-tavyāniyarrah). Similarly, blocking of an externally conditioned (bahirāṅga) rule or operation by an internally conditioned (antarāṅga) one is also permitted. Furthermore, since an entity x can be treated as y, the application of a rule or set of rules can be treated as suspended (asiddha) with reference to another rule or set (see chapter 5 for details). This principle of asiddhata is responsible for dividing the Aṣṭādhyāyī into two major sections (8.2.1 pūrvatrasiddham), the first consisting of the first seven books and the first quarter of book eight, and the second consisting of the last three quarters of book eight. Placement of rules in ordered sets also marks functional divisions within these major divisions. Of course, all functional divisions are made in light of internal relations among rules and the contexts they share. To sum up, the rules of
the Aṣṭādhyāyī are formulated and arranged on the basis of context, function, relative strength and internal relationship.

Pāṇini's grammar serves as a means towards understanding sentences. This goal is accomplished by abstracting generalizations from usage and formulating rules which best capture that usage. In order to facilitate proper formulation, interpretation and application of rules, however, a grammar also requires a metatheory. This Pāṇini brilliantly supplies. In so doing, he carefully defines terms (samjñā), sets forth rules of interpretation (paribhāṣā) and outlines the conventions he follows. However, given the sūtra style of rules, one must make inferences, and test and reject or accept them depending on whether or not they are in consonance with Pāṇinian practice. Such procedure is the primary task of vyākhyāna which, in addition to being instrumental to the proper understanding of sūtras, has also contributed many proposals which are incorporated in the grammar. The paribhāsas of the Paribhāṣenduṣekhara (PS) of Nāgėśa (many of which may be found here in chapter 8) are one example. Another example is constituted by the vārttikas of Kātyāyana to which I shall now turn.

It has been stated that vārttikas are statements found in the bhāṣya where they serve as pratika 'focus'. They focus on things which have not been or have been but poorly stated (durukta) in the sūtras (see above fn. 2). The existence⁹ of vārttikas prior to Kātyāyana is well established. However, the pre-Kātyāyana vārttikas are lost and vārtika has become synonymous with Kātyāyana's vārtika just as bhāṣya has become synonymous with the Mahābhāṣya of Patañjali. The total number of sūtras on which Kātyāyana offers his vārttikas is 1,245.¹⁰ Kielhorn gives the total number of vārttikas as 4,293. Is this a correct number? Why did Kātyāyana not offer vārttikas on other sūtras? These are not easy questions to answer. First of all, vārttikas are available as part of the Mahābhāṣya. Kielhorn effectively shows how they can be recognised by treating an immediately following paraphrase of Patañjali as a clue. However, not all vārttikas recognized by this method are accepted by commentators. Answering the second question is more difficult. Perhaps Kātyāyana did not find it necessary to add vārttikas to other rules or perhaps vārttikas on rules not treated by Patañjali have been lost as the Mahābhāṣya is their only extant source. That Kātyāyana wrote vārttikas for only one-third of the sūtras of Pāṇini is difficult to believe. It is my thinking that Kātyāyana also formulated vārttikas on other rules but Patañjali did not make use of them. The reason for this thinking is the fact that a bhāṣya treats vārttika as a pratika in a well structured argument known as vyākhyāna. The selection and treatment of a vārttika depends entirely on how it fits in the structure of vyākhyāna. The very fact that Patañjali paraphrases a vārttika in the same way that a vṛtti paraphrases a sūtra is thus not a chance.

¹⁰ Sarma (1968:54).
The purpose of a vārttika can only be established with reference to the structure of the Mahābhāṣya and corresponding discussion. Joshi (1969: iii-iv) characterizes the discussion of the Mahābhāṣya as a 'sustained argument and identifies its pattern as consisting of 'question (objection)-answer'. Since an objection has to be refuted or affirmed based on its examination in light of examples and counter-examples, an objection may have counter-objections which again may be refuted or reaffirmed. A vārttika forms part of this complex argument structure by serving as a pratīka. A vārttika can also ask questions, raise objections, refute or reaffirm them, though only as a player in the game plan totally at the mercy of the planner of the game. The purpose of a bhāṣya is to make a sūtra fully understood and the purpose of a vārttika is to complement a sūtra.

People still have the impression that Kātyāyana formulated his vārttikas to find fault with the sūtras of Pāṇini. However, since this is not true of all the vārttikas, and especially not of those which were rejected by Patañjali, this view should be abandoned. By focusing more on the vārttikas which Patañjali accepted and which seek certain modification in a sūtra or its scope, people consider Kātyāyana an antagonist of Pāṇini. They also think that Patañjali was the champion defender of Pāṇini against Kātyāyana. Kielhorn (1963:52) is correct in observing that “Pāṇini has suffered more at his [Patañjali’s] hands than at those of the vārttikakārās”. Patañjali (Mbh. I:128) claims that not even a single letter of a rule is meaningless. Yet we see many of the sūtras of Pāṇini declared meaningless by Patañjali.11 Can we say that Patañjali is trying to find fault with the sūtras of Pāṇini? The answer has to be no. I think that it was a common practice to explain sūtras by raising doubts about aspects of their formulation and application. One can even call it putting a sūtra to test. This testing is indeed thorough and the Mahābhāṣya, aided by vārttikas, does it commendably, though its ultimate goal is exposition. It has also been suggested that the Sanskrit language had changed by the time of Kātyāyana. To account for this change, Kātyāyana formulated vārttikas.12 While linguistic changes from Pāṇini’s time to Kātyāyana’s may not be totally ruled out, understanding the primary purpose of the vārttikas as an attempt to accommodate them is unreasonable. I am not denying, however, that there are some vārttikas which can be viewed as proposing accommodation for usage subsequent to, or even contemporaneous with Pāṇini’s Sanskrit.

I shall now try to explain the operation of vārttikas by using some specific examples. Given the string sudhi + bhis āpāṣya + sU (SK. I:55) where bhīs and sU are instrumental plural and nominative singular endings respectively, 2.1.32 kārtīkāraṇe kṛtā bahulam can allow the formation of the compound sudhyūpāṣyaḥ ‘to be revered by the wise’. The endings will be

11 See, for example the Mbh. discussion of sūtras 1.4.25-31 (II:392-99).
12 Sarma (1968:55-75).
deleted by 2.4.71 supra dhātu prātipadikayoḥ. However, Pāṇini, by rule 1.1.62 pratyayalope pratyayalakṣanam, states that operations conditioned by an affix obtain even when the affix has been deleted. Given this, sudhi, whose affix bhis has been deleted, can still be treated as a pada (1.4.14 supitiṇantam padam). After 6.1.77 iko yan aci applies to yield sudh(i → y) + upāṣya, rule 8.2.23 samyogāntasya lopah becomes applicable. This rule requires the deletion of the last consonant of a conjunct occurring at the end of a pada. Thus, it would yield: sudh (y → 0) + upāṣya = *sudhupāṣya, a wrong form. It is true that after a replacement in yN by 6.1.77, the deletion of a final consonant of a conjunct at the end of a pada is not carried out. Pāṇini does not do this in his own sūtras either (cf. 5.2.94 tad asyāṣṭya asmin iti matup; 2.4.44 atmanepadesu anyatarasyām). Obviously, the scope of 8.2.23 is much too wide. Kātyāyana (Mbh. V:387) suggests by his vārttika, samyogāntasya lope yanah pratiśedhaḥ, that deletion of an yN replacement at the end of a pada should be prohibited. As a result, wrong forms such as *sudhupāṣya cannot result. Pāṇini’s failure to include this prohibition has been treated by many as his carelessness. Kātyāyana’s formulation of this vārttika then, can be treated as discussing something which has not been said, or has been stated but poorly; the vārttika thus complements the sūtra.

Now consider the order of constituents in a dvandva (2.2.29 cārthe dvandvah) compound. Pāṇini states that a constituent having fewer vowels should be placed first (2.2.34 alpāc tāram). However, some usages do not conform to this general ruling. Kātyāyana issues a series of clarifying vārttikas (Mbh. II:747-8). For example, he states that names of seasons and constellations which contain equal number of vowels should follow the order in which they occur (ṛtanakṣatrāṇām ānuṣṭūryena samānākṣarāṇāṁ pūrvanipātah). Thus we get examples citrāsvāti ‘the constellations Citrā and Suśī’ and śiśiravasaṇaḥ ‘winter and spring’, etc. Similarly, other usages are explained by additional vārttikas. Kātyāyana states that constituents with short (laghu; 1.4.10 hrsvam laghu) vowels or those denoting an elder brother or lower number should also be preplaced. This accounts for examples such as saraśādam ‘reed and weed’, yudhiṣṭhirarjunāu ‘Yudhiṣṭhira and Arjuna’ and dvitrā ‘two or three’. Obviously these vārttikas account for forms which could not be accounted for by rule 2.2.34.

The assignment of ātmanepada ‘middle’ and parasmaipada ‘active’ endings is very tricky. Kātyāyana has offered many vārttikas which further sharpen the focus of the Pāṇinian rules. Consider 1.3.25 upām mantrakarake which states that sthā used with the preverb upa takes ātmanepada when mantra is the karana ‘means par excellence’ of the action. The word mantra refers to a hymn or chant. This could cover examples such as aindryā gārhyapatyaṃ upatiṣṭhate ‘he is worshipping the gārhyapatya fire by means of
chanting the hymn to Indra.’ Kātyāyana introduces the vārttika: upād devapūjā-saṅgatikarana-mitrakarana-pathiṣv-iti. This extends the coverage of the rules to include examples where praising gods, making friends and road-destination are being expressed. Thus, we get the following examples:

(a) ādityam upatiṣṭhate
   ‘he is praising the Sun’
(b) devadatto yajnaddatam upatiṣṭhate
   ‘Devadatta is making friends with Yajñadatta’
(c) ayam panthā pāṭaliputram upatiṣṭhate
   ‘this road leads to Pāṭaliputra’.

Besides such numerous examples where Kātyāyana complements, commendably, the Pāñjinian rules, there are occasions when he offers vārtikas which are overruled by Patañjali. This suggests the following inference: the rejected as well as accepted vārtikas were offered not as independent statements questioning the formulation of the sūtras in question, but as statements serving as cues or symbols (pratika) in light of which a sūtra may be examined. This makes a vārttika one unit of thought in the complex structure of a bhāṣya discussion. It is for this reason that a vārttika is also referred to as bhāṣyasūtra.

The Mahābhāṣya of Patañjali is regarded as the second most important grammatical text after the Aṣṭādhyāyī. As has been stated, its aim is the presentation of vyākhyāna ‘exposition’ of the sūtras of Pāñjini. It is claimed (Sarma 1968:53) that Patañjali commented upon 1,701 sūtras in addition to aha śabdānusāsanam and eight Śivasūtras. He classified the Mahābhāṣya into 85 āhnikas ‘day-sessions’ with the first being generally known as Paspasāhnikā (Paspāsā) ‘introductory day-session’. The order of selected sūtras follows the Pāñjinian order. A bhāṣya discussion is rendered as a dialogue or structured argument where a vārttika or a statement from Patañjali serves as pratika. After a paraphrase of a vārttika is presented, the discussion illustrates and evaluates it by means of arguments supported by examples and counter-examples. The tradition recognizes three participants in the discussion: the student (śīsyā), teacher’s aide (ācāryadesāyi) and teacher (ācārya). The tradition also makes references to a participant who knows only part of the truth (ekadeśin) and another who offers the final view (siddhāntin). It is to be remembered here that identifying the statements of these participants is often difficult.

The bhāṣya discussions seem to be structured around two basic issues: what is given as established and whether or not that can be accepted. Thus, sūtra, vārttika or statement from Patañjali can be treated as given. Whether that can be accepted as established depends on the nature of doubts raised against it. If a doubt is satisfactorily resolved, the statement is accepted. If not, modifications are proposed, discussed and accepted. Patañjali begins
the Mahābhāṣya by taking atha śabdānuśāsanam ‘here commences the instruction of words’ as a pratīka. Questions are then raised about the meaning of the word śabda, its nature (svarūpa) and the purpose (prayojana) of grammar (śabdānuśāsana). The discussion then moves to the nature of grammar. At a time when the discussion is progressing towards the meaning of a word as the subject-matter of grammar, Patañjali offers another pratīka, this time as a vārttika (Mbh. I:27):

siddhe śabdārthasambandhe
‘given that word (śabda), meaning (arthā) and their inter-relationship (sambandha) is eternal (nitya) ....’

The discussion now centers on nitya, its sense (nityatva) and the types of eternality. The question of considering a word as ākṛti ‘form class,’ which offered the occasion for introducing this vārttika is taken up again. This discussion, too, proceeds with example and counter-example; one can find this pattern of argument throughout the Mahābhāṣya.

Patañjali should be commended for presenting the basic theoretical issues related to the grammar of Pāṇini in the Paspaśā. (For his views on grammar in detail see chapter 3.) I shall here present a summary of some issues raised. Patañjali first discussed word (śabda) as the subject-matter of grammar. This refers to the words both of Vedic and classical Śanskrit. An example of word in classical Sanskrit is offered: gauh ‘cow, bull’. A question is raised whether what is perceived as having dew-lap (sāsnā), tail (lāṅgūla), hump (kakuda), hooves (khura) and horns (viśāṇa) is the word gauh. The answer is no, since that is dravya ‘thing’. Does motioning (iṅgita), moving (ceṣṭita) or blinking eyes (nimīṣita), since they express meaning, constitute word? The answer again is no since those are actions (kriyā). What about white (sukla), blue (nīla), brown (kapila), or brindled (kapota)? These are not words either as they are qualities (guṇa). Can word be that which is a common property therein things and is not destroyed when they are destroyed? No, that is ākṛti ‘class, universal’. What then is word? Word is that, by which when uttered one perceives things having dew-lap, tail, hump, hooves and horns; that is, the thing cow, or, word is sound (dhvāna) by means of which meaning is comprehended. Now, what about word being ākṛti (jāti) ‘universal’ or dravya ‘thing’: it could be both.

15 (Ibid. I:6) yat tarhi tad iṅgītam ceṣṭitam nimīṣitam sa śabdaḥ. nety āha; kriyā nāma sā.
16 (Ibid.) yat tarhi tra chulka nilah hrayah kapilaḥ iṣa sa śabdaḥ nety āha; gauḥ nāma saḥ.
17 (Ibid.) yat tarhi tadbhinnam abhinmaṁ chhinnaṁ achchinnam samyābhitam sa śabdaḥ nety āha; ākṛti nāma sā.
19 (Ibid.) athavā pratītapatardhako loke dhvaniḥ śabdaḥ ity ucyate . . . tasmād dhvaniḥ śabdaḥ.
It is in this context that the vārttika siddhe śabdārthaśambandhe is introduced and the discussion turns to the word nītya ‘eternal’. Patañjali states that the word nītya of the vārttika is synonymous with siddha. He illustrates this synonymity by these examples: siddha dyauḥ ‘heaven is eternal’; siddhā ṭṛthivāi ‘the earth is eternal’ and siddham ākāśam ‘the ether is eternal’. Answering the question of how one knows what is eternal, he says:20 that which is kūṭastha ‘fixed’ and doesn’t move from one state to another (avicaḷi) is nītya. Commentators call it kūṭasthanītyatā. However, siddha may also denote things accomplished by means of an action. Consider these sentences: siddhah odanah ‘the rice is cooked’; siddhah sūpah ‘the broth is cooked’ and siddhā yavāgūh ‘the gruel is cooked’. So long as the word siddha is available in usage denoting something brought about by means of an action, it could not be treated as synonymous with nītya alone. Patañjali refuses to accept nītya as referring to sādhya ‘to be accomplished by means of an action’.21

The discussion now focuses on a paraphrase of the vārttika accomplished by taking word (śabda) as referring to ākṛti ‘form, class’ or dravya ‘thing’, on the one hand, and the question of eternality (nītyatva) on the other. The question of the difference between ākṛti ‘form’ and jāti ‘class, universal’ is also implied. The eternality of jāti can be understood but that of dravya is hard to comprehend. Patañjali starts by saying that dravya is nītya but ākṛti is not. He illustrates this by the example of gold (suvarṇa) which remains the same though its form changes from one ornament to another.22 He then takes the position that nītya refers to a thing which remains fixed (dhruvam, kūṭastha), is not modified, nor moves from one state to another; it sustains no loss or gain and retains its basic element (tattva) even when it is destroyed.23 This retention can be compared with the notion of pravāhanītyatva ‘eternity in a continuum’24 which is used in the context of speech which is passed from one generation to another. A word is spoken, and when spoken, brings about the understanding of meaning. The spoken word is thus the manifestation of the eternal characterized as kūṭastha. This is passed from generation to generation, still eternal, though in a continuum.

20 (Ibid.:28) nītyaparyāyavacī siddhāt.abadh. katham jñāyate? yat kūṭasthesu avicālisu bhāveṣu vartate. tad yathā-siddhā dyauḥ, siddhā ṭṛthivī, siddham ākāśam iti.
21 (Ibid.:28) yauvāt kāreyesu api vartate. tad yathā-siddhah odanah, siddhah sūpah, siddhā yavāgūḥ iti. yauvāt kāreyesu api vartate tatra kuta etan nītyaparyāyavacino grahaṇam na punah kāreyah siddhālabdā ati...siddha eva na sādhya iti.
22 (Ibid.:31) ...tāthā suvarṇam kayācid ākṛtyā yuktaṁ pīḍam bhavati...punarāvṛttiḥ suvarṇapindah punar aparyākṛtyā yuktaḥ khadārangārasavarṣe kundale bhavataḥ. ākṛti anyā cānāy bhavati, dravyam punas tad eva.
23 (Ibid.:31) athavā nemā eva lakṣaṇam-dhruvam kūṭastham avicālāṇaparyāptajanīvākāranyun-patayodhānavayogyo yat tan nītyam iti. tad api nītyam yasmīṃ tatvaṁ na vihanyate.
It is clear from above that Patañjali does not accept word merely as jāti, ākṛti, kriyā or guṇa. For him, a word is that which, when uttered, brings about comprehension of meaning (arthā). The word is thus dhvani but only for ordinary people. For grammarians, the real word is sphota ‘that by means of which meaning is made manifest’. It is received by ears, perceived by buddhi ‘mind, thought process’ and reflected in sound (dhvani). This reflection in sound is not the reflection of meaning. Instead, it is the reflection of word. Meaning does not leave word (Mbh. I.510). Meaning is comprehended by word itself. The word is eternal and resides within us.

Patañjali quotes a hymn (RV. 4.58.3) which characterizes word as a bull with four horns, three feet, two heads and seven hands. The bull has been tied in three places and is roaring. This bull is the great god who has made his abode within us mortals. In order to be one with this god one must study grammar. It is stated that the four horns are nāman ‘nominals’, ākhayāta ‘verbs’, upasarga ‘preverbs’ and niṇāta ‘particles’. The two heads are the eternal word and the word in the form of sound. The seven hands are the seven triads of nominal endings (vibhakti). The bull is tied at the chest, throat and head. This idea of the great bull was further elevated to the status of brahman ‘supreme being’ characterized as the eternal word. This and the doctrine of sphota have been discussed in detail in the VP of Bhartrhari.

The basic purpose of a grammar, says Patañjali (Mbh. I:25) is to account for the words of a language, not by enumerating each one of them, but by writing a set of general (sāmānya) rules with related exceptions (viśeṣa). These rules must be based on generalizations abstracted from usage for which the language of the śiṣṭas ‘learned’ is the norm. Use of correct words brings merit (punya), though Patañjali seems to be making an additional proposal. That is, as word-by-word enumeration is not a good means (upāya) of understanding words, understanding them by means of incorrect words is equally futile. The mass of incorrect words is overwhelming and making generalizations based upon them is impossible. Hence, Patañjali recommends that for economy (lāghava) one must study words by focusing on correct usage (see chapter 3 for details).

Patañjali, as explained above, closely associates word and meaning. In doing so, he was led to address the question of whether individual sounds

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25 (Ibid.) ...sphotaḥ śabdaḥ, dhvaniḥ śabdagunah...
26 (Ibid.) catvāri śrīgā trayo asya pādā dvie śrīse sapta hastāso asya tridhā baddho vṛṣabho roraviti mahī devo martyrām ā viveśa.
27 (Ibid.:17) catvāri śrīgāni catvāri padajātāni nāmākhyātayogaprasanipātās ca. trayo asya pādās trayāh kālāh bhūtā-bhavasyad-vartamānāh, dvie śrīse dvau śabdātmanau niyāh kāryāc ca. sapta hastāso asya sapta vibhaktayah...mahaḥ devaḥ śabdah...mahāta devena naḥ sāmyaṃ yathā syād iṣy adhyeyam vāhkaranam.
28 (Ibid.:24) lāghutvaḥ chatdopadesia ṣhī śabdopadeso gariyān apasadopadesiaḥ.
carry any meaning. The discussion (Mbh. I:101-6) starts with the vārttika:

_arthavanto varṇadhātuprātipadikapratyayanipātānām ekavarnānām artha-
darśanāt._

This vārttika argues that since a dhātu ‘root’, prātipadika ‘nominal stem’, pratyaya ‘affix’ or nipāta ‘particle’ consisting of a single sound segment is seen to carry a meaning, a single sound segment carries meaning. Further support to this argument is brought by a second vārttika:

_varṇavyataye cārthāntaragamanāt._

A single sound segment is meaningful because changing a sound segment brings about change in meaning. Thus, consider kūpah ‘water-well’, sūpah ‘soup’ and yūpah ‘ritual post’ where changing k, s and y results in change of meaning. This vārttika seems to be arguing that the meanings of these individual words are carried by k, s and y respectively. Now consider the third vārttika:

_varṇānmupalabdham cānarthagate._

The argument that a single sound segment carries meaning can also be supported by the fact that removing a sound segment renders a sequence meaningless as far as the original meaning is concerned. Thus, removing _v_ from _vrksa_ would remove the meaning ‘tree’. Further support is forwarded by the following vārttika:

_samghātārthavatvāc ca._

A single sound segment carries meaning since it is part of a conglomeration which is meaningful. Thus, a conglomeration is meaningful because its parts are also meaningful. Or, a conglomeration is meaningless because its parts are also meaningless. A single sesame contains oil; hence, its conglomeration contains oil; but, just as a single blind person is not capable of seeing anything, so neither is a conglomeration of blind people. This shows that those parts whose conglomerations are meaningful are also meaningful.

Arguments next are advanced in favour of a conglomeration alone being meaningful. The vārttikas again summarize the arguments against the necessary background provided by the Mahābhāṣya. If one accepts that a single sound segment carries meaning, then operations applicable to meaningful items would obtain on individual sounds. An example in point is the introduction of _sU_, etc., and in consequence, the assignment of the term _pada_ and the deletion of the final _-n_. At this point, a vārttika is introduced which asserts that since a single meaning can only be expressed by a conglomeration, _sU_, etc., cannot be introduced after individual sound segments:
This apparently was in response to the view that single sound segments carried meaning. The vārttika tries to remove the doubt that sU, etc., could thus be applied to individual sounds. Now consider the following vārttika:

anarthakäs tu prativarṇam arthānupaśabdheḥ.

Single sound segments are indeed meaningless since meaning does not obtain in each and every sound segment. Furthermore:

varṇavyayayāpāyopajanavikāreṣu adarśanāt.

Here, original meaning is not seen to be impaired even when sound segments are transposed, deleted, added or replaced. Thus, hiti undergoes transposition in deriving simha 'lion' but there is no transposition of meaning. There is a deletion of n of han in deriving hata 'killed' but there is no deletion of meaning. In deriving lavitum 'for the purpose of cutting,' the iT has been added without any addition in meaning. Finally, the h of han is replaced by gh in deriving ghātakah 'killer' but its original meaning has not been replaced. If individual segments were carrying any meaning, then their transposition, deletion, addition or replacement should also have resulted in the transposition, deletion, addition or replacement of meanings. This shows that individual segments do not carry any meaning.

The bhāṣya now, after presenting both positions, asks what view should be treated as correct. The answer, as shown in the real world, is both. Among students putting in equal effort and studying, some are successful, others not. By analogy, just because single sound segment is meaningful, everyone does not become meaningful. The rest do not carry any meaning. However, this may create difficulty with kūpah, sūpah and yūpah in connection with which it was argued that the distinction in meanings of these three words was based on k, s and y. This would mean that their individual meanings are tied to individual sound segments which, in turn, become meaningful. This difficulty is removed by understanding these three words as three different conglomerates. Simply switching k, s, and y does not change the meaning of their respective conglomerates. If that was the case, since uṇah is common to them all, quite a large segment of meaning of, for example, kūpah should remain in sūpah and yūpah and vice versa. Since this is not the case, we understand these three words as separate conglomerations with separate meanings. A problem remains, however. The bhāṣya accepted that the meaning of kūpah is the meaning of its k, and so on. This renders uṇa vacuous. The bhāṣya resolves this difficulty while discussing rule 1.2.45 arthavād. . . There it states that sometimes one may find that a conglomerate gives a meaning which may not be available to its individual parts. Similarly, in regards to a chariot (ratha) or liquor (surā), the component parts of a ratha, for example, do not
possess movement (gatī) but only the conglomeration does so, while the
various elements which are brought into making liquor are individually
not intoxicating but their conglomeration is so. Thus it is not always the
case that if the conglomeration is meaningful that the parts which compose
it are also meaningful. In short, meaningfulness should be decided based
upon anuvaya ‘concurrent presence’ and vyatireka ‘concurrent absence’. This
extended discussion in the Indian grammatical tradition clearly shows
both how the grammarians were concerned with theoretical issues which
still interest contemporary linguists, as well as how they were fond of
drawing analogies between the world of grammar and the outside world.

Since a grammarian believes in the authority of words as attested by
usage (loka), the real world has prominence in the discussions of the
Mahābhāṣya. It is not just a coincidence that Patañjali constantly brings the
realities of the outside world to bear upon the discussions of the inside
world of grammar. There are numerous maxims (nyāyas) which Patañjali
mentions in support of grammatical discussions. These maxims, aside
from explaining a particular point of view, make the discussions livelier.
Some of them are discussed below.

Consider the maxims: takrakaunḍinya, dhānyapalāla and devadat-
tahantryanam (odyata) (Mbh. I:436). They concern general rules (utsarga),
exceptions (apavāda) and their negation (pratiṣedha). With the understanding
that an exception carves out the domain of application from within the
domain of a general rule, let us investigate the meaning of these maxims.
The maxim takrakaunḍinya is referenced in the Mahābhāṣya (I:352) by dadhi
brāhmaṇeṇvayo diyatām, takraṃ kaunḍinya 'a yoghurt be given to the
brāhmaṇas; buttermilk to Kauṇḍinya'. Now, Kauṇḍinya, to whom buttermilk
is supposed to be given, is also a brāhmaṇa. He, by being a brāhmaṇa,
is entitled to the gift of yoghurt (dadhi). However, by being Kauṇḍinya, he
is entitled only to the gift of buttermilk (takra). A conflict may arise here
since he meets the condition of both gifts. Moreover, there is no indication
whether Kauṇḍinya should be blocked from receiving dadhi forever. Can
he be given yoghurt after he has been given buttermilk? Here, the general
(dadhidāna) and specific (takradāna) are both concurrently present just as
we see the grain (dhānya) in the husk (palāla).²⁹ There is a concurrent
presence of the specific contained within the general (dhānyapalālanyāya).
However, the general and the specific cannot be applied concurrently and
since a specific provision in relation to a general would become meaningless
unless it is used, the buttermilk supercedes the yoghurt, the grain wins over
the husk. More clearly, in grammar, an exception blocks the general rule.

This blocking of a general by a related exception has been likened to the
killing (hanana) of a general rule. Now, let us see what happens when an

²⁹ For a detailed discussion see Mbh. I:57-58; also p. 259.
exception is negated (pratisidhyate); that is, when the killer of a general rule is killed. This is the subject of devadattaḥahnatran (odyat) anyāya. The question is, can Devadatta, a general rule killed by an exception, become alive when his killer, the exception, is killed by negation (pratisedha). Remember that a general rule has right of application to the entire domain in which an exception carves out its subdomain. When this latter is negated, can the general, once blocked by the exception, be applied? Well, first of all, how could Devadatta become alive when he has been killed by the killer — this is against the reality of the outside world. The only way Devadatta could be alive is when someone, who is about to kill him, is killed by someone else. Devadatta does not become alive either once he is killed or when he is saved from being killed by someone; he is still inactive. This maxim does not hold good for the world of grammar. For, in the world of grammar, a general rule blocked by an exception finds its scope only when a negation has applied to the exception and the general rule still finds scope. Note also that when a negation applies, and afterwards, when the general rule finds its scope, it is as though the general rule has become alive after having been killed by the negation. I have omitted ramifications of these three maxims, especially in the manner in which they are interpreted with reference to particular examples, as my purpose here is only to show how Patañjali manipulates parallels from the outside world to support or reject certain proposals. I hope this also shows how these maxims add colour to the discussion on hand.

Many examples cited in the Mahābhāṣya also add colour to the discussions, even though indirectly, since their basic purpose is to illustrate the issue on hand. Consider for example: abrahmano 'yam yas tiṣṭhaḥ mūtrayati (Mbh. II:674) ‘he is a non-brähmaṇa as he is urinating while standing’, khandikopādhyāyaḥ sisyāya ca peṭāṁ daḍāti (Mbh. I:137) ‘the teacher is slapping the student’, chatropānāhapiṛiyāḥ (Mbh. II:614) ‘a student to whom shoes and umbrella are dear’, and vaiyākaraṇākhasūciḥ (Mbh. II:614) ‘a grammarian who, when asked a question, points towards the sky’.

Consider one additional, though slightly different, example: udahāri bhagīṇī yā tvam kumbhām harasi śirasā anadvāham sacīnām abhidhāvāntam adrāksīh (Mbh. I:454) ‘O, you sister, carrying water in a pitcher on your head, did you see a bull running about here and there’. This is an example of a complex sentence where the relationships among the constituents is easier to comprehend than in: anadvāham udahārī yā tvam harasi śirasā kumbhām bhagīṇī sacīnām abhidhāvāntam adrāksīḥ. Note that the language is simple, yet changing the word order creates complexity. Patañjali is gifted when it comes to writing simple sentences with lyrical flow. He uses the best of simple idiomatic Sanskrit, though his sentences are able to deliver the maximum of meaning. Patañjali’s power of observation is unlimited, his style very lucid, yet his presentation remains economical and precise.
There are two major commentaries on the *Mahābhāṣya*: the *Mahābhāṣya-Pradīpa* (Pradīpa) of Kaiyaṭa (AD 11) and the *Mahābhāṣya-Pradīpodyotana* (Uḍyota) of Nāgėśa. The former is regarded as the single most important commentary in the tradition. Without the *Pradīpa*, so goes the claim, the *Mahābhāṣya* could never be fully understood. The latter commentary, *Uḍyota*, though apparently a commentary on Kaiyaṭa’s *Pradīpa*, is in many ways a commentary on the *Mahābhāṣya* itself.

Bhartṛhari (VP. II:482) is correct in claiming that the seeds of all basic principles are embodied in the *Mahābhāṣya* (*sarveṣām nyāyabijānāṁ mahābhāṣyāṁ nibandhane*). These principles not only relate to Sanskrit grammar and linguistics but also to logic, philosophy and life. His discussions also reflect methodological precision. Kielhorn (Staal: 1972) has discussed, with illustration, some of the techniques the *Mahābhāṣya* manipulates in dealing with the *sūtras*. Thus, *yogavibhāga* ‘splitting a rule into two or more’, *anabhidhāna* ‘non-denotation’, *anuktasamuccaya* ‘gathering something not stated’, *jñāpaka* ‘clue derived based on Pāṇini’s practice’, etc., can be cited as prominent examples. Kielhorn (Staal, 1972:127) claims that Kātyāyana and Patañjali together have resorted to *yogavibhāga* close to a hundred times. These interpretive techniques show the analytical acumen of Patañjali. Above all, they show the desire and capability on his part to accomplish the goal stated by a *sūtra*.

I have indicated that the relationship between a *sūtra* and its *vṛtti* is very similar to that between a *vārttika* and a *bhāṣya*. The purpose of a *vṛtti* is to faithfully paraphrase the *sūtra* such that it includes all the information relevant to the correct understanding of the *sūtra*. Since a paraphrase cannot be arrived at without properly analysing the constituents of a *sūtra* in terms of endings and compounds, *vṛtti* normally includes such information. Since *sūtras* rely a great deal on understood information, it is the task of the *vṛtti* to retrieve such information, either by indicating its domain (*adhiḥkāra*) and recurrence (*anuvṛtti*) or by making explicit statements. Examples and counter-examples follow, though only as an effort to indicate the application of a *sūtra*. This is the minimum one can expect from a *vṛtti*. A *vṛtti* is committed to the *sūtra* and hence, is not supposed to offer any criticism. This latter is the domain of *bhāṣya*. Chronologically, a *vṛtti* precedes a *vārttika*. I have treated the discussion of the *Mahābhāṣya* first because the only extant full-length *vṛtti* available to us is fairly late.

Yudhiṣṭhira Mīmāṃsaka (1972:435-37) claims, based upon internal evidence from the *Mahābhāṣya* and Kaiyaṭa, that there were at least four or five *vṛtis* written on the *sūtras* of the *Aṣṭadhyāyī* that predate Patañjali. From some *Mahābhāṣya* statements claiming that certain *sūtras* were explained by Pāṇini in different ways, Mīmāṃsaka concludes that Pāṇini must have composed his own *vṛtti*. Mīmāṃsaka brings further evidence to support this claim. I have already stated that given the *sūtra* style of rule
formulation, a *vyrtti* to follow is a must. Pāṇini may not have composed a *vyrtti* but he must have explained his *sūtras* by means of statements similar to *vyrtti*. The pre-Patanjalian authors of *vyrttis* include names such as Vyādi, Kuni and Mādhura. Mīmāṃsaka discusses forty-six *vyrttis* in all, thirty-eight of them with the discussion of their authors.

The Kāśikāvyrtti (Kāśikā) is regarded as the third most important grammatical text after the Āṣṭādhyāyī itself and the Mahābhāṣya. Commentators explain its name either by interpreting it as kāśīsu bhāvā 'brought about at Kāśī' (now Varanasi) or as kāśayatī prakāśayatī sūtrārthān 'that which illuminates the meaning of sūtras'. The authorship of this *vyrtti* also has been debated. A majority of scholars consider it the work of Jayāditya and Vāmana (AD 7). There is also disagreement on who wrote what portions of this *vyrtti*. It is generally believed that the first five books were written by Jayāditya and the remaining three by Vāmana. However, there is much evidence, both external and internal, concerning the authorship which is conflicting: the dual authorship of the Kāśikā, though, is settled. These and other questions have been discussed in detail by Mahesh Dutt Sharma (1974) and Vedālaṅkāra (1977). Some of the following observations also come from these studies.

The opening stanzas describe the features of Kāśikā as being a summary of principal views scattered over *vyrttis*, bhāṣya, dhātupārāyana 'listing of roots', and nāmapārāyana 'listing of stems in groups', etc. Furthermore, it includes īṣṭi 'desiderata', upasamkhyaṇa 'addenda', sūddhagana 'correct listing of gaṇas', unfolding of hidden meanings of sūtras (vīrṭaghūḍhasūtrārthas) and the derivation of forms (rūpasiddhi) constituting examples. We know from Kāśikā itself that it includes the vārttikas of Kātyāyana and the īṣṭis of the Mahābhāṣya. In addition, Kāśikā has its own īṣṭis and vārttikas. Its examples and counter-examples often remind one of the style of the bhāṣya where they are presented in view of arguments and counter-arguments. All this does not fit very well within the framework of *vyrtti* in the technical sense of the term. A *vyrtti* does not normally include īṣṭis and upasamkhyaṇa. Nor does it include gaṇas, let alone their corrected forms. Kāśikā, in view of its features, looks more like a condensed bhāṣya. Since Kāśikā is a fairly late text and clearly summarizes the principal views of diverse sources, because of the availability of materials and a desire to accommodate all of them, its content goes far beyond the expected content of a *vyrtti*. However, it still is a *vyrtti* since it accepts a sūtra as the pratikā for its discussion.

Kāśikā has often been charged with presenting sūtras with variant readings. It discusses 3,981 sūtras which also include atha śabdānusāsanam and fourteen Ss. There are four major sources for variant readings: rule splitting (yogavibhāga), elevation of a vārttika to the level of a sūtra, inclusion of all or part of a vārttika in a sūtra and addition or deletion of certain items
from a sūtra. Vedālaṅkāra (1977:350-1) lists fifteen sūtras where yogavībhāga is discussed by Mahābhāṣya; Kāśīkā accepts nine sūtras and lists them as eighteen. Vedālaṅkāra argues that since Kāśīkā did not accept other proposals of yogavībhāga and only accepted what SP was available from the tradition, the authors of Kāśīkā did not introduce yogavībhāga by themselves. This is not acceptable. Kāśīkā was well aware of the Mahābhāṣya, which means the authors of Kāśīkā had the Mahābhāṣya available to them from the tradition. If they accepted only what was available from the tradition there is no reason why they should not have accepted the other instances of yogavībhāga. The logic that the edition of the Mahābhāṣya which the authors of Kāśīkā may have had access to did not have yogavībhāga, and hence Kāśīkā did not accept it, is hardly convincing. For, there are instances in Kāśīkā where yogavībhāga ascribed to kecit ‘someone’ is referred to but obviously not accepted. This means that the authors of Kāśīkā must have applied their own judgment as to whether or not to accept a particular yogavībhāga. Besides, listing a sūtra as split, at least for authors such as these, would amount to saying that they did the splitting.

There are ten instances where a vārttika has been listed by Kāśīkā as a sūtra and sixteen instances where Kāśīkā includes part of a vārttika in a sūtra. The variations caused by addition or deletion are numerous. The instances of vārttikas being listed as separate sūtras could clearly be labelled violations if it could be shown that deleting them would cause serious gaps in the functioning of the Aṣṭādhyāyī; gaps which could not be filled by accepting them only as vārttikas. I am not convinced that such gaps would result. The addition of a vārttika as part of a sūtra could still be treated as a violation, for a statement of the vṛttikāra could easily account for it. However, in some cases, Kāśīkā has included vārttikas in sūtras for economy. A case, on this same ground, can also be made for instance where Kāśīkā collapses vārttikas into one.

The same economy can be seen as the reason for adding elements to a sūtra. Consider as an example rule 3.1.126 āsuyuvapiroplapi. . . where an additional root laipi has been added. Patañjali does not discuss this rule. Haradatta’s PM on 3.1.126 makes no comment. Jinendra’s Nyāsa seems to be accepting the inclusion of laipi. The SK and Tatvabodhinī do not accept it. This rule introduces affix NyāT to derive forms such as lāpyam. Now, if this root is not included in this rule forms such as lāpyam would emerge by the introduction of yaT. The NyāT derivate lāpyam could never be deriv. The addition of laipi to the rule is found in the Cāndra-vyākaraṇa (cf. 1.1.133 āsuyu . . . laipi . . .). Some treat it as an influence of Cāndra on Kāśīkā, although this inclusion is perfectly in accord with Kāśīkā’s stated goal of bringing information from elsewhere. Kāśīkā simply wants to account for forms like lāpyam. Without the inclusion of the root laipi in the sūtra, this is not possible. This inclusion could be looked upon as useless if lāpyam did not exist in usage.
However, since it does exist, Kāśikā accounts for it. Why did not Kāśikā not account for it by employing some other means? Other means, such as writing a vārttika or īṣṭi would have been uneconomical. Besides, the structure of the rule is such that lāpyam can be accounted far easily by inserting lāpi into the sūtra.

There are several sūtras in the Kāśikā where its description is influenced by Čāndra and Kātantra. Most of these influences have been recorded by Kāśikā in the form of modifying a sūtra or rendering a statement in the form of a vārttika or īṣṭi. An example of addition has already been discussed. Now consider the following rules.

2.2.3 dvitiyatṛīyacaturthaturyāny anyatarasyām
Kāśikā: tvṛyatābādasyāpiṣyatē
the compound formation of tvṛya is also desired'.

3.2.86 karnaṇi hanaḥ
Kāśikā: kutsitagrahananāṃ kartavyam
‘kutsita ‘censured’ should also be included’
4.1.54 svāṅgāc copasārjanād asamyogopadhāt
Kāśikā: angagātrakṣantēbhya iti vaktavyam
‘after āṅga ‘limb,’ gātra ‘body’ and kaṇṭha ‘throat’, etc. (affix NiS) should be stated’

The sentences cited above under each sūtra are Kāśikā’s own vārttikas, although the first looks more like an īṣṭi. Rule 2.2.3 provides for the formation of a tvṛputruṣa compound with the first constituent containing dvitiya ‘second,’ tṛīya ‘third,’ catirtha or turya ‘fourth’. Kāśikā with its vārttika requires that tvṛya ‘fourth’ should also be desired to be mentioned. This is necessary to account for forms such as tvṛyabhikṣa or bhikṣāturīyam ‘fourth portion of alms’. Čāndra and Kātantra both have sūtras accounting for these compounds though Mahābhāṣya and SK do not provide for them.

Rule 3.2.86 karnaṇi hanaḥ introduces affix NiI after verbal root hana ‘to kill’ when, among other things, a pada denoting karna co-occurs. Thus, we get examples like māṭulagāthā ‘he who killed his maternal uncle’. However, the way it stands, this rule cannot stop the derivation of forms such as cauraghāthi meaning cauraṃ halavān ‘he killed a thief’. It is to prevent such forms Kāśikā that recommends the sūtra to include kutsā ‘censure’ as a meaning condition. Both Kātantra and Čāndra include this. The Mahābhāṣya, of course, does not. Others in the tradition seem to be agreeing with Kāśikā.

Our third sūtra, 4.1.54 svāṅga ..., provides for optional introduction of the feminine affix NiS after an upasārjana (1.2.43 prathamā nirṛīṣṭa ...) stem denoting svāṅga ‘one’s limb,’ terminating in a and not containing any conjunct (samyoga) in its upadhā ‘penultimate position’. Thus we get
examples mṛduhasti/mṛduhastā ‘she whose hands are soft’, candramukhī/
candramukhā ‘she whose face is like the moon’, etc. Kāśikā advocates inclusion
of stems such as aṅga ‘limb’, gātra ‘body’, and kantaḥ ‘throat’, all of
which have a conjunct in their upadhā. This inclusion will account for
usages such as mṛdvaṅgi/mṛdvaṅgā ‘she whose limbs are soft’, sugātri/
sugātrā ‘she whose body is beautiful’ and snigdhakanṭhī/snigdhakanṭhā ‘she
whose voice is sweet’. Obviously, such an inclusion is not available in the
Mahābhāṣya. The SK characterizes it as the proposal of the vṛttikāra ‘author of
vṛtti’, most likely the Kāśikāvṛtti. Haradatta, in his Padamañjari (PM),
states that ‘though aṅga-gātra, etc., are not stated in the Mahābhāṣya, the
author of the vṛtti mentions them because of their frequency in usage’
(aṅga-gātra ityādi bhāṣye’ nuktam apty etat prayogabhāhulyād vṛttikārenoktam).

The preceding shows that the authors of Kāśikā were keenly aware not
only of other systems of grammar but also of what was or was not frequent
in usage. They tried to account for usage and hence had to formulate their
own vārttikas and modify the wordings of sūtras. Obviously these things are
not what a vṛttikāra should do. However, if one sees it as an effort to cover
usage, it was truly remarkable.

Kāśikā’s examples have diverse sources. Most of them come from the
Mahābhāṣya though a large segment comes from classic and contemporary
sources. The Mahābhārata, Rāmāyaṇa, Kṛtārjuniyam, Suśruta and Caraka
are important sources for classical usage. Some of these examples go
directly against the Mahābhāṣya but the authors have included them to
account for usage. For example, consider yudhiṣṭhirah śreṣṭhatamah
kurūnām ‘Yudhiṣṭhira is the best among the Kuruś’.30 It uses śreṣṭhatama
where affix tamaP is introduced after śreṣṭha ‘excellent’ to denote ‘exceeding
excellence’. Now, the word śreṣṭha is derived by introducing affix
iṣṭhaN. Both these affixes are used to denote atāśyana (5.3.55 atāśyane
tamabhiṣṭhanau) ‘excessive excellence’. The word śreṣṭhatamah has both these
affixes. Such usage has not been attested by the Mahābhāṣya (IV:210)
except for Vedic. Kāśikā takes its example from the Mahābhārata and
indicates its possibility in the vṛtti. It is not hard to find many other
instances of śreṣṭhatama in the literature and Kāśikā’s explanation is
designed to account for such usage.

There are two commentaries on Kāśikā: the Kāśikāvivaraṇapaṇcikā or
Nyāsa of Jinendrabuddhi (AD 9) and the Padamañjari (PM) of Haradatta
(AD 11). They both take elements of Kāśikā as pratika. Nyāsa’s language is
simple. Almost one-sixth of it is devoted to derivational details.31 The PM
uses a comparatively more complex style and language. It follows the
Mahābhāṣya in details and sometimes enters into lengthy discussions

31 Bhimasena Shastri (1976:36).
which obscure the understanding of issues symbolized by the statement from Kāśikā.

Mention must also be made of the Bhāṣāvṛtti of Puruṣottamadeva (AD 12), which draws heavily from Kāśikā, and the Bhāgavṛtti of Vimilamati (AD 8). This last is not available. Puruṣottama, as the name of his vṛtti suggests, only includes rules dealing with bhāṣā 'classical Sanskrit'. Specifically, he has excluded rules which deal with accent. Although he arranges the sūtras in eight books of four quarters each, he further groups the sūtras into sections with headings indicating the nature of rules and operations. He also includes vārttikas. One would find section headings such as vṛddhādisamajñāprakaranam 'section dealing with the terms vṛddhi, etc.', ghvādisamajñāprakaranam 'section dealing with the terms ghu, etc.', vacanap- rakaranam 'section dealing with number', liṅgaprakaranam 'section dealing with gender', ādeśāprakaranam 'section dealing with replacement', etc. Similarly, one can find statements indicating the end of the sections, but Puruṣottama is not consistent in this regard.

Puruṣottama has a real flavour for brevity, though he thus takes a lot for granted. He normally does not make explicit statements about anuvṛtti unless it is necessary. Often he presents the elements of anuvṛtti in the gloss of the sūtra. These glosses are worded in a manner that facilitates glossing individual items. Thus, a rule like 3.1.17 āśāvāśāprakalalābhā... karaṇa can be glossed as: ebhyah kriyāyām kyaṁ syāt 'let there be Kyaṅ after these when the sense is 'doing, making'. Note that the rule uses karaṇa, which is also a technical term denoting 'instrument'. Puruṣottama, instead of saying that karaṇa does not refer to instrument, straightforwardly glosses it as kriyāyām. He also includes Kyaṅ in the gloss rather than saying, in addition, that Kyaṅ is carried. In the next rule (3.1.18 sukha-dibhyah kartrvedanāyām), he simply glosses kartrvedanāyām as kartur anubhave 'when the agent experiences'. Puruṣottama does not deem it necessary to indicate that karmāṇa is carried as modifier to items enumerated by the rule. Furthermore, he does not take a lengthy route to explain kartrvedanāyām as Kāśikā does: ... vedanāyām arte' nubhave ... vedayiti cet kartuḥ sambandhitih sukha-dinī bhavanti 'in the sense of vedana, i.e. anubhava (experiencing) ... provided sukha 'pleasure', etc., are related to the agent's own experiencing'. Puruṣottama simply says: ebhyah kartur anubhave kyaṁ syāt 'let there be Kyaṅ after these when the agent's own experiencing (is being expressed). Mark that Kāśikā uses vedana, glosses it as anubhava, then interprets it as locative leading it to say anubhava. Kāśikā also adds arte 'in the sense of', which Puruṣottama does not see as necessary, since anubhava, in the locative, would automatically account for that.

Puruṣottama normally does not offer counter-examples. This is in consonance with his practice of not explaining why a particular form is used in the sūtra in the way in which it is used. Counter-examples cited by
other commentarial works anticipate such questions. Puruşottama mentions vṛttikas without mentioning their source, though occasionally he cites sources such as Kāvyāyana (p. 124), ganastūra (p. 184), eke 'someone' (pp. 192, 209), smṛti 'tradition' (pp. 201, 205), Vararuci (p. 227) and Saunāga (p. 435). The Bhāsavṛttī examples are more varied and have been chosen for clarity of structure and frequency in usage. Puruşottama's paraphrases are terse and economical. As already stated, they take much for granted. Since he also avoids separate mention of anuvṛttī and counter-examples, it occasionally becomes difficult to understand the exact meaning of his paraphrases. He makes full use of the Mahābhāṣya but shies away from theoretical statements. In summary, he tries to explain the sūtras with straightforward paraphrases using minimum of words. His work can serve as a ready reference for the meaning and examples of the sūtras, though it can be used only by those who are well versed in the Aśṭādhyāyī.

The Rūpāvatāra of Dharmakīrti (AD 11) is the oldest extant text of the prakriyā tradition. By this time the focus of grammatical study had changed from interpretation to application. Furthermore, study of grammar had reached a stage where an easier means of teaching was felt to be required. Thus, the second opening verse of Rūpāvatāra gives 'facilitating the understanding of beginners' as goal. As a consequence, efforts were undertaken to limit the number of sūtras under discussion. Since the focus had shifted to application, an indifference towards finer details of interpretation was also witnessed. The same goes for counter-examples. What we see here as strikingly different from the vṛttis is the lack of details concerning interpretation and an abundance of details concerning derivation. In the process, taking many things for granted, Rūpāvatāra becomes very economical, though its style of brevity is altogether different from the non-prakriyā texts. It discusses only 2,664 rules but its examples number many times more. Its most effective means of reducing the number of sūtras under discussion is to exclude rules dealing with accent and Vedic Sanskrit.

It was again due to change in emphasis that listing of sūtras was done in view of operational topics and contexts. The Pāṇinian order of rule listing was abandoned. The notion of prakaraṇa 'context' in Pāṇini was thus modified. The Pāṇinian prakaraṇa was conceived in view of physical placement of rules, their interpretation and application especially as it related to context sharing (ekavāhyatā) among rules. The notion of prakaraṇa in the prakriyā tradition was strictly conceived in view of particular derivational types. Since the Pāṇinian order of rules was disturbed, elements of anuvṛttī had to be supplied by statements. The prakriyā statements were not worded like vṛttis. In addition to giving paraphrases of the sūtras, they

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32 Rūpāvatārāḥ (I:XVI).
were worded so as to introduce operational details and clues. The prakriya statements introduced rules as they became operative in a given operation on a given input. Paraphrases were given such that the basic meaning of a rule was understood and the context of an operation became clear.

Rūpāvatāra consists of two parts, the first being divided into eight avatāras 'manifestations': samjnā ‘technical terms’, samhitā ‘close proximity between sounds’, vibhakti ‘nominal inflection’, avyaya ‘indeclinable’, stripratyaya ‘feminine affixes’, kāraka, samāsa ‘compound’ and tadadhita ‘secondary suffixes’. It is interesting to note that the first avatāra deals with terms strictly limited to samhitā; other technical terms of the grammar are introduced if and when they become necessary. The pratyāhāra-sūtras also had to be included here for the same reason. The second part of Rūpāvatāra has three major paricchedas ‘divisions’: sārvadhātuka (3.4.113 tīśīt sārvadhātukam), ārdhadhātuka (3.4.114 ārdhadhātukam śesah) and kṛt (3.1.93 kṛd atīni). Each division is further classified into prakaraṇas ‘sections’. The division of this second part into three sections is clearly based on the classification of affixes introduced after verbal roots. The entire second part is presented under the general title of dhātupratyayaparicīkā.

Rūpāvatāra closely follows Kāśikā, although its paraphrases are much simpler. Its examples have diverse sources: they could be from Kāśikā, the Mahābhāṣya or later classical literature. The examples, also, have been selected for derivational reasons. Thus, an example which shows clearly the application of a given rule would be preferred over one which may involve other applications. Also, an example which clearly blends in with the discussion of a vārttika would be preferred over one which does not. Rūpāvatāra, in addition to including vārttikas, also includes slokavārttikas, ājñā and summary verses relating to examples and grammatical operations. It also has kārikās ‘verses’ from the Vākyapadīya of Bhartrhari. These materials are incorporated mainly as references, often with examples. Much of their meaning and implication, however, is not clarified. Although Rūpāvatāra covers quite a few Pāṇinian rules with copious examples and vārttikas, it did not attain much popularity, mostly due to over-simplification; still, it was a very successful attempt at prakriya.

A relatively mature form of prakriya is found in the Prakriya-kaumudi (PK) of Rāmacandra (AD 14). It not only standardized the format of prakriya texts, but also served as a link between the old school of grammar and the new. It was heavily influenced by Kāśikā and also borrowed from other systems of grammar. Rāmacandra not only left out many sūtras of the Āstādhyāyī, but also refrained from explaining others. However, the number of sūtras in the PK is far greater than in the Rūpāvatāra. Hence, it is not surprising to find that Rāmacandra accepts the following in one of his later verses.
ānanyāt sarvaśabdā hi na śakyante' nusāsitum/
bālavyutpattaye' smābhīḥ samśipyoktā yathāmatiḥ//

'Because of their being infinite, all words are not possible to be instructed; (therefore) they have been discussed by me in summary as I see fit for the benefit of making beginners conversant (in grammar).'

This verse attests to the idea of simplification which I have already identified as one of the motives behind the development of the prakriyā texts.

Rāmacandra, similarly to Dharmakīrti, focuses on sūtras dealing with classical Sanskrit. However, he has a small section at the end dealing with prakriyā in Vedic. In addition, many Vedic rules have been included elsewhere in the work, according to the context. The division of sections is also elaborate but does not vary in substance from the Rūpāvatāra. For example, the first section dealing with samjñā includes many more rules dealing with the technical terms but the goal is still the same: to focus on those samjñās which may be beneficial to sandhi (sandhyupayogin).

Rāmacandra does not follow the arrangement of Rūpāvatāra when it comes to dealing with the derivation of forms ending in tiN (3.4.78 tiptasji. . .). The tiN are a set of twenty-one affixes ruled as replacements for abstract suffixes generally referred to as LA. Rūpāvatāra has two major sections: sārvadhātuka and ārdhadhātuka. This division does not bring out the features of verbal paradigms clearly. Rāmacandra, instead, follows a different route. He discusses the verbal paradigms with reference to the grouping (gana) of roots and whether or not they are marked for parasmāpada, ātmanepada or both terminations. This arrangement became standard for later prakriyā texts. Rāmacandra also was careful about how and when to introduce a sūtra. This resulted in the rooting out of repetition in the listing of sūtras; the Rūpāvatāra had had repetition in abundance.

Rāmacandra takes a lot for granted. His explanations of sūtras are very brief and his statements concerning the context of a sūtra or its application are still briefer. His examples are not numerous, and when discussing derivations, he takes many details as understood. Rūpāvatāra provides better explanations, however simplistic they may be. However, Rāmacandra's organization is very good. It was the lack of explanatory details plus the influence of other grammatical systems which subjected Rāmacandra to severe criticism by Bhaṭṭoji Diśita. The PK was saved from still more violent criticism by its commentary, the Prasāda by Viṭṭhala, the grandson of Rāmacandra. It is true that Rūpāvatāra and PK represent pedagogical texts which lack the depth of Kāśka, but they became popular. The PK, even though harshly criticized for some of its interpretations, became the standard for Bhaṭṭoji's SK, the text which represents the peak of the prakriyā tradition.
Bhaṭṭoji's SK replaced PK as the pedagogical standard. Its scope was wider, including all of Pāṇini's rules. Its detailed interpretation and prakriyā was not provided to ease the teaching of grammar but to enhance the understanding of grammar as such. All it shared with PK was format. Bhaṭṭoji had an eye for meticulous detail and interpretation. It is this quality that makes SK the standard text for studying Pāṇini. It overshadowed not only Kāśika but even the Aṣṭādhyāyī itself, sparing the Mahābhāṣya only because SK closely follows its interpretations. The SK brings the grammatical literature that began with Patañjali full circle. Bhaṭṭoji (SK, I:1) states in his opening verse that 'he is making the SK after having paid obeisances to, and having contemplated the sayings of, the three sages'.

It has been stated that the SK follows the organizational format of the PK. However, since Bhaṭṭoji was not simply writing a pedagogical text, the format was further refined. For example, he adds a section of paribhāṣā after samjña. He follows Rāmacandra's arrangement in discussing sandhi, but adds a section of prakṛtiḥañcā 'non-sandhi'. The arrangement of rules dealing with compound formation is also elaborate. He adds two additional sections: sarvasamāśāsa 'residue of compounds' and samāśārayavidhi 'operations with compound as locus'. Bhaṭṭoji also introduces here ekaśeṣa 'retention of one' as a separate section, since he considers it one of the elliptical formations (vṛttis). Since the SK treats all the rules, the arrangement of taddhita (4.1.76 taddhitāḥ) is also elaborate. Here, they are organized in sections following major affixes.

Bhaṭṭoji has organized his SK into two parts: the first part deals with sandhi, samāsa and affixes introduced by rules in books four and five of the Aṣṭādhyāyī. The second part deals with affixes introduced in the third book of the Aṣṭādhyāyī. In addition, Bhaṭṭoji also has sections on Vedic as well as accents of affixes, compounds and roots. What is surprising is his inclusion of two sections, one dealing with the Unādi affixes and the other dealing with the Phītsūtras (see chapter 2 for details). Normally, one would not expect these listings as part of the main text. The fact that Bhaṭṭoji interrupts his discussion of kṛt (3.1.93 kṛt atiñ) affixes to accommodate Unādi is most surprising. They are not related to verbal derivatives only; why didn't he put them right after the taddhitas? However, locating the Phītsūtras close to the sections dealing with accent is not out of place since they deal with accent of nominal stems.

Bhaṭṭoji, in the second part, proceeds with the description of verbal paradigms arranged according to the classification of roots in ten gaṇas 'groups'. This follows Rāmacandra's procedure, but Bhaṭṭoji's treatment is more comprehensive. He provides nearly every significant detail ranging from classification to meanings and derivation. A discussion of rules dealing with NiC 'causative', saN 'desiderative', yaN 'intensive',
deletion of yaññ and denominatives follows. Bhaṭṭoṇi then brings the discussion of ātmanepada 'middle' and parasmaipada 'active' suffixes. The impersonal (bhāva), passive and reflexives follow. The tiṅ affixes are classified in two sets with the first nine termed parasmaipada and the remaining nine ātmanepada (1.4.99 laṅ parasmaipadam; 1.4.100 taññāñāv ātmanepadam). These two sections of ātmanepada and parasmaipada principally discuss rules which allow or disallow the placement of tiṅ affixes. The earlier treatments of tiṅ took this for granted and focused on verbal paradigms. The same goes for the treatment of LA 'abstract affixes LAṬ, etc.' Affixes denoted by the abbreviated term tiṅ and classified as parasmaipada or ātmanepada are replacements of LA. The section dealing with kṛta affixes, as I have mentioned, is interrupted by the Unādi section. Prior to Unādi, this section deals with kṛtya (3.1.95 kṛtyāḥ) and other kṛ affixes. Affixes tumUN, GHaṅ, Ktvā and ṇamUL, etc., follow Unādi.

Bhaṭṭoṇi strived to include practically everything essential for understanding the sūtras. If one rearranges his treatment in Pāṇini's original order and edits some remarks to fit in place, one can have another vr̥tti parallel to Kāśikā. This indicates that the SK is a vastly different text from the others in the prakriya tradition. Bhaṭṭoṇi accepts the three sages, especially Patañjali, as authority (pramāṇa) although his work has also benefited from Kāśikā and PK. He often identifies statements which form part of Kāśikā but are not found in the Mahābhāṣya. Bhaṭṭoṇi accepts things from Kāśikā but rarely when they are not in consonance with Patañjali.33

The SK draws its examples from the traditional sources which includes Kāśikā, although Bhaṭṭoṇi tries to find examples, especially for rules dealing with classical Sanskrit, from literature. Many of the examples have been cited in modified form simply to economise the listings. Thus, instead of listing grāmam adhiśete 'he is sleeping in the village' and grāmam adhīvasati 'he is living in the village,' he will simply list the verbal forms. He also follows the PK in relating examples which deal with Viṣṇu and Kṛṣṇa. Thus, where Kāśikā has tiṣṭhate kanyā chaṭrebhyaḥ 'the girl is waiting for the students' and madhu atra 'there is honey here,' SK, like PK, has kṛṣṇāya tiṣṭhate gopī 'the gopi is waiting for Kṛṣṇa' and cakrī atra 'Viṣṇu is here'. The Vedic examples have been taken from Saṁhitās, Brāhmaṇas and Āraṇyakas, but Bhaṭṭoṇi relies mostly on the Mahābhāṣya and Kāśikā.

The number of vr̥tti kas used in the SK is comparatively less than the Kāśikā. It is believed that since the focus was on prakriya, only those vr̥tti kas were used which were directly related to examples. Mahesh Dutt Sharma (1974:144) observes wherever Kāśikā refers to a vr̥tti ka in its citation form, SK refers to the same in paraphrase. Conversely, wherever Kāśikā does not refer to a vr̥tti ka in citation, SK does so. Bhaṭṭoṇi has used the

33See Mahesh Dutt Sharma (1974: 91-111) for details.
vārttikas to facilitate the prakriyā and rarely takes any steps which may cloud their identity. Thus, practices such as elevating a vārttika to the status of a sūtra, reading a part of it in the body of a sūtra or reading a single vārttika as two or more are seldom found. It is also known that if something cannot be accounted for by sūtra, vārttika or bhāṣya, Kāśikā would formulate its own vārttika or iṣṭi. Bhaṭṭoji normally refrains from doing so. Instead, he tries to resort to some analytical means.

Bhaṭṭoji generally gives importance to the views of Patañjali. When he accepts things from other commentaries he is very careful. Let us examine the following rules.

2.2.15 trjakābhyām kartari
'a word which ends in genitive (saśthi) is not combined with another word which underlies a form in trC or aka and denotes kārtr 'agent'

2.2.16 kartari ca
'a word which ends in genitive and denotes kārtr is not combined with another word which underlies a form in aka'

2.2.17 nityam krīḍājīvikayoḥ
'a word which ends in genitive is obligatorily combined with another word which underlies a form in aka when the compound denotes krīḍā 'sport' or jīvikā 'livelihood'

Kāśikā and Bhaṭṭoji interpret these rules differently. Specifically, Kāśikā treats kārtr as modifier (viśeṣana) of saśthi in 2.2.15 and of trC and aka in 2.2.16. That is, according to Kāśikā, the word which ends in genitive should also be expressing kārtr. The expression of kārtr is not seen as a condition for genitive in 2.2.16. Bhaṭṭoji, however, does the opposite. He requires that the word which underlies a form in trC or aka must also express kārtr in 2.2.15. Treating kārtr as a modifier of trC is problematic. A form ending in trC obligatorily denotes kārtr. Why should one further modify it with kārtr? Pāṇini may not have intended it. Bhaṭṭoji hastens to add that since trC already denotes kārtr, only aka should be modified by kārtr. Kāśikā, perhaps to avoid this, made kārtr a modifier of genitive. But Kāśikā runs into problems too. It cannot find any example for a string of words where one ends in genitive and denotes agent, and the other underlies a form in trC. Such examples are impossible as trC denotes agent, which genitive cannot. It would be duplication. If one says that the two forms will be expressing different agents then the question of their forming a compound would not arise. They would not be syntactically relatable with each other. Kāśikā says that trC is used in 2.2.15 for anuvṛtti to subsequent rules. The interpretations of both SK and Kāśikā are problematic. SK, however, can offer examples and show the application of this rule. Kāśikā has to say that Pāṇini used trC not for use in 2.2.15 but for use in 2.2.16 and 2.2.17.
Either interpretation has consequences for 2.2.16 and 2.2.17. SK does not consider the purpose of trC beyond 2.2.15; Kāśīkā carries it along with aka. Since it modifies trC and aka here with kartr, however, Kāśīkā, like SK has to accept that since trC expresses kartr, only aka is supposed to be modified by kartr. To sum up, SK and Kāśīkā interpret these rules inversely. That is, SK interprets rule 2.2.15 the way Kāśīkā interprets 2.2.16 and vice versa. SK seems logical as well as economical since it does not have to carry trC to 2.2.16-17. Furthermore, it does not have to maintain as Kāśīkā does in the case of 2.2.17, that examples of trC denoting 'sport' and 'livelihod' do not exist.

The Mahābhāṣya does not help much as it does not discuss these rules. However, under 2.2.14 (Mbh. 11:685), it offers examples parallel to those Bhaṭṭoja cites under 2.2.15. The same type of examples are cited by Kāśīkā under 2.2.16. Bhaṭṭoja got his clues from Haradatta’s PM 2.2.15:

atha kasmād viparyayo nāśriyate-īha trjakaviśeṣanām
kartragrahanām uttaratra saṣṭhīviśeṣanām; evaṃ
trtragrahanānaḥ na vaktavyaḥ bhavati ...

‘how come inversion is not resorted to: kartr is used here as a modifier of trC and aka; subsequently as a modifier of saṣṭhī; this way, it will not be necessary to state that trC is used for (anuvṛtti) in subsequent sūtras.’

Note. however, that SK (3807) on Pāṇini’s 6.2.73 ake jīvikārthe offers ramaṇīyakarttā ‘one who decorates’ as an example, a word underlying a stem in trC and denoting jīvikā ‘livelihood’. It states that this compound is derived by the application of 2.2.17. Recall that SK does not accept the anuvṛtti of trC beyond 2.2.15 and Kāśīkā says that there are no examples. Two questions: (a) how can Bhaṭṭoja’s interpretation of 2.2.17 derive ramaṇīyakarttā and (b) where does this example come from? The source is Kāśīkā itself. Note that this part of Kāśīkā is supposed to have been written by Vāmana and not by Jayāditya, who is supposed to have written the vr̥tta of the section containing rules 2.2.15-17. Note also that Bhaṭṭoja takes this example from Kāśīkā. Furthermore, he criticizes Kāśīkā’s interpretation of 2.2.15 in his Saṁdakaustubha.

Bhaṭṭoja has criticized Kāśīkā whenever he finds something against the Mahābhāṣya. Consider the following rule.

3.2.78 suṣṭy ajātāu nīnis tācchilye
‘affix Nīni is introduced after a verb root when a word denoting something other than jāti ‘class’ co-occurs and the derivate denotes tācchilya ‘one’s nature’

An example offered by Kāśīkā is usṇabhojī ‘he whose nature it is to eat warm food’. Kāśīkā thinks that since Pāṇini uses the word sUṣṭ from the earlier rule, this must have some
special purpose to it. That purpose, according to Kāśikā, is to stop the anuvṛtti of upasarga ‘preverb’. That is, since sUP and upasarga were both carried to 3.2.77 from 3.2.76, carrying sUP from 3.2.77 to 3.2.78 would also require carrying upasarga which Pāṇini did not wish to do. Consequently, Pāṇini used sUP explicitly in 3.2.78. However, there are examples such as udāsārinyāh and pratyāsārinyāh where suffix NinI occurs after verbal root āṣy ‘to come’ used with the preverbs ut and prati respectively. These derivates, according to Kāśikā’s interpretation of 3.2.78, cannot be explained. Consequently, Kāśikā introduces its own vārttika: utpratibhyām āni sartter upasamkhyaṇam ‘a statement should be made to account for āṣy preceded by ut and prati’.

Bhaṭṭoji insists that this interpretation of Kāśikā, which has also been followed by Haradatta and Mādhava, the author of the Dhātuṣṭīti, should be disregarded as it is against the interpretation of the Mahābhāṣya (SKIV:73): iha vṛttikārenopasargabhinna eva supi ninir iti vyākhyāya utpratibhyām āni sartter upasamkhyaṇam iti paṭhiitam. haradattamādhavādhibhiś ca tad evānuśṭītaḥ etac ca bhāṣyavirodhād upēksyam ‘here the author of the vṛttī, having analysed the sūtra as meaning ‘verb root without a preverb when co-occurring with a pada ending in uSP’, reads that ‘a statement should be made to account for āṣy preceded by ut and prati’. This has also been followed by Haradatta and Mādhava, etc. For reasons of opposition to the Mahābhāṣya this should be disregarded. The Mahābhāṣya maintains that sUP is used in 3.2.78 to indicate that in this rule ‘a co-occurring word ending in sUP’ alone is the condition. Bhaṭṭoji provides examples such as anuyāyin ‘follower’, etc., where affix NinI can be found after a verb root used with a preverb.

It has been stated that the tradition of prakriyā began with pedagogy as its goal although Bhaṭṭoji’s goal was not exactly the same. One can still think that he shared the goal of focusing on derivation and presenting rules in an order most conducive to that. This indeed was the purpose behind rearranging the Pāṇinian rules. It is surprising to learn that except for ease in prakriyā no other reason has been given by the tradition for the new sūtra arrangement. The tradition has resisted anything not in consonance with Pāṇini. It has also discussed practically everything relevant to the Aṣṭādhyāyī in particular and grammar in general. No one knows why the tradition did not voice any resistance to this new order of rules. I consider the prakriyā rule order, at best, unfortunate.

As already stated, SK has enjoyed immense popularity. Bhaṭṭoji himself wrote a commentary Praudhamanoramā on the SK. Another commentary Bālamanoramā by Vāsudeva Dikṣita (AD 18) followed. Later, Jñānendra Saraswatī wrote a very good commentary on Praudhamanoramā under the title of Tattvabodhini. Sabdendushekara, both long (bṛhat) and short (laghu) versions, are two very learned commentaries on SK by Nāgeśa. There have
also been three separate versions of the SK: a sāra ‘summary’ and a laghu version by Varadarāja, and a madhyā ‘medium length’ version by Rāmaśarman (AD 17). The laghu-kaumudi still enjoys popularity among beginners.

The Aṣṭādhyāyī was not formulated for teaching Sanskrit. This does not mean that it cannot be used for learning Sanskrit. In fact, it has been, and to a lesser degree still is, being used for this purpose. The SK and its various abridged versions are still used for teaching Sanskrit in traditional circles. The claim that prakṛtyā texts made the derivational process easier to comprehend can be defended. However, to defend it at the expense of the Aṣṭādhyāyī is not acceptable. First of all, the new order of grammatical works takes a lot for granted, especially things like the function of rule 1.4.2 vipratisedhe... where any change in the Pānini order of rules is crucial. Secondly, this new order obscures some basic distinctions Pānini intended to maintain. An example in point is the treatment of kāraka and vibhakti as one in the prakṛtyā texts. Finally, the new arrangement deals perhaps a serious blow to the sophisticated derivation mechanism the Aṣṭādhyāyī so meticulously presents. A case in point is the process of anuvṛtti and what I discuss in later chapters as reference to antecedent.
The Āṣṭādhyāyī and its Related Texts

The Āṣṭādhyāyī consists of about four thousand sūtras arranged in eight chapters (adhyāya) of four quarters (pāda) each. The number of sūtras in the chapters or quarters varies in accordance with the topic and organizational constraints. In order to clearly understand the organizational structure of the Āṣṭādhyāyī itself, we must first consider some materials which are often treated as separate from the main text but nevertheless are necessary for its understanding. These are the Śivasūtra (Śs), the Dhātupātha (DP), the Gaṇapātha (GP), the Uṇādisūtra (Us), the Phiṣṭūtra (Phs) and the Lingānuśāsana (Lā).

(a) The Śivasūtra (Śs)

The Śs is a set of fourteen aphorisms enumerating the sound segments (varnasamānmāya) of the Sanskrit language in the order most conducive to forming the abbreviatory terms (pratyāhāra) used in the grammar.

1. a i u Ñ
2. r l K
3. e o Ñ
4. ai au C
5. hᵃ yⁿ vⁿ rⁿ ṭ
6. pⁿ Ñ
7. nⁿ mⁿ nⁿ nⁿ nⁿ nⁿ M
8. jhⁿ bhⁿ Ñ
9. ghⁿ dhⁿ dhⁿ ṣ
10. jⁿ bⁿ gⁿ dⁿ dⁿ ṣ
11. khⁿ phⁿ chⁿ ṭhⁿ thⁿ cⁿ ŋⁿ tⁿ V
12. kⁿ pⁿ Y
13. śⁿ śⁿ sⁿ R
14. hⁿ L

An item indicated here by capital letters is traditionally termed an it and is not treated as an item in the list. However, its may serve as the final (antya) for any initial (ādi) element which, joined together, forms an abbreviatory term (pratyāhāra) to represent the initial and all intervening elements.¹ For example, the initial a of the first Śs can join the final C

¹ see 1.1.71 ādir antyena sahetā.
of Śs four to form the abbreviatory term aC signifying a and all intervening non-uit items. Thus, aC denotes all the vowels. Similarly, aL designates the totality of vowels and consonants.

Another symbol, which is also not an item on the list, is the a used with the consonants of Śs five through fourteen. This a facilitates the pronunciation of the consonants in question. I have indicated the occurrences of this a by raising it. The a of Śs six is treated by Kāśī and SK3 as an uit in order to form an abbreviatory term rĀ which would denote r and l. I represent this Ā as a non-uit because treating it otherwise would be non-Pāṇinian.

Pāṇini's method of forming abbreviatory terms with the help of the Śs can yield a vast number of abbreviations. However, the Aṣṭādhyāyī uses only 41 abbreviations, summarized in the following śloka-vārttika4:

ekāsmān naṇanavatā dvāḥbhyaṃ śas tribhya eva kaṇamāḥ syuḥ/
jñeyau cauyau catubhya raḥ pañcabhyah salau saḍbhyaḥ//

"one (abbreviatory term) each with N, N, N, V, T; two with Ś, three each with K, N, M; four each with C, Y; five with R and six each with Ś, L”

Thus:

1. eN, yN, aN, chV, aT
2. jhŚ, bhŚ
3. aK, uK, yN, aN, iN, N, M, aM, yM
4. aC, eC, aC, iC; mY, jhY, khY, yY
5. rR, yR, jhR, khR, cR
6. jhŚ, jŚ, bŚ, aŚ, hŚ, vŚ; aL, hL, sL, vL, rL, jhL

If we treat the a of Śs six as an anunāsika uit, as has been advocated by Kāśīkā and SK, we will get an additional abbreviation, rĀ. There are two more abbreviatory terms, cY and N, the first of which is attested by vārttika 3 ad 8.4.88 (cauy dvitiyāḥ śari paśuṭkarasādeḥ)6 and the second by the Unādisūtra (1/114) naṃantād daḥ. This brings the total to 44. The following chart shows these abbreviatory terms with their initial item (ādi), listed in the first vertical column, as well as their final element (uit), listed in the first horizontal column.

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2 Kāśīkā (1.53) hakārādiṣv akāra uccaṭāṇārthaḥ, nānumbhandhaḥ. lakāre tv anunāsikāh prati-

3 Kāśīkā (1.59-60).

4 SK (1:4) ...eṣām anitya itah. lan-sūtre hāraś ca. hakārādiṣv akāra uccaṭāṇārthaḥ.

5 Mbh. (3:508).

6 SK (IV:166).
The order of elements listed in the Śs is as follows:

1. vowels (Śs 1-4)
   (la) simple (Śs 1-2)
   (lb) complex (Śs 3-4)
2. consonants (Śs 5-14)
   (2a) semivowels (Śs 5-6)
   (2b) nasals (Śs 7)
   (2c) stops (Śs 8-12)
(2c₁) voiced aspirates (Śs 8-9)
(2c₂) voiced non-aspirates (Śs 10)
(2c₃) voiceless aspirates (Śs 11)
(2c₄) voiceless non-aspirates (Śs 12)
(2d) spirants (Śs 13-14)

The above order does not conform with the order of earlier listings, such as those of the prātiśākhyas, although there is considerable similarity of terminology and classification. Pāṇini certainly was aware of such previous classifications. However, his Śs listing reflects his own special purposes. Patañjali states that the Śs are presented in this fashion for the purpose of vṛtti ‘application of rules’ and samavāya ‘ordered enumeration of elements’ (Mbh. 1:47 vārttika. 18). Vārttika 19 cites the setting up of anubandhas as an added purpose. Actually, the pratyāhāras are a means for bringing the elements of the list close to rule applications. A full and insightful discussion of this, as well as the principles of sāmānya and viśeṣa underlying the listing of the Śs in relation to their anubandhas, is presented in Cardona (1969).

The denotata of some abbreviatory terms may not, at first glance, be obvious. Consider aN and iN. Should the N of these abbreviations be interpreted as the N of Śs 1 or of Śs 6? For, aN and iN formed with Śs 1 will denote only a, i, u and i, u respectively. If the N is interpreted as belonging to Śs 6, respectively a, i, u, r, l, e, o, ai, au, h, y, v, r, l and i, u, r, l, e, o, ai, au, h, y, v, r, l will be denoted. However, an abbreviatory term iN formed with the N of Śs 1 to denote i, u counters Pāṇinian practice. Pāṇini never uses iN to denote i, u; instead he uses iN to denote sounds enumerated by Śś 1 through 6. Both interpretations of aN, however, are valid. The question as to when aN should be interpreted as formed with the N of Śś 1 and when with the N of Śś 6 can only be resolved by the explanations (vyākhyāna) of the learned. For correct results, aN in 1.1.51 ur an ṛprahā, for example, should be treated as formed with the N of Śś 1. As opposed to this, aN in 1.1.69 aṇudit savarnayā... must be interpreted with the N of Śś 6.

Rule 1.1.69 states that a vowel (aN), as well as an item marked with U, denotes itself as well as sounds homogeneous (savarnā) with it. Thus, a denotes a class of eighteen vowels distinguished on the basis of length: short (hrasva), long (dirgha) or extra long (pluta); pitch: high (udātta), low (anudātta) or circumflex (svarita); and nasality: nasalized (anunāśika) and non-nasalized (nirununāśika). Similar classes of eighteen each is represented by i, u and r. The ḷ vowel represents a class of only twelve vowels as it lacks a corresponding long variety. Vowels denoted by eC (e, o, ai, au) also represent a class of 12 each. Here, unlike the case of ḷ, a corresponding short variety is not available. Items with U as their it represent a class"
of five consonants each. Thus, \( kU \) (k) represents \( k, kh, g, gh \) and \( n \). Similar consonant classes are represented by \( eU \), \( tU \), \( tU \) and \( pU \).

There are many problems which may be raised concerning the formulation of the \( S \)s and the use of the resultant abbreviatory terms; problems relating to the order and selection of sound-segments and its, the use of \( N \) as an \( i \) twice, the use of \( h \) as an element twice, as well as the use of a pratyāhāra with no less than three denotata. A detailed discussion of these and other problems relating to the \( S \)s may be found in Cardona (1969).

(b) The Dhātupātha (DP)

Pāṇini introduces augments (vikarana), with their relevant affixes and deletions, with reference to groups of roots. Thus, 2.4.72 adiprabhṛtibhyah sapah and, 2.4.75 juhotyādibhyah śluḥ delete the augment SaP and SaLU after roots enumerated in the list headed by ad ‘to consume’ and hu ‘to offer a ritual sacrifice’. Similarly, 3.1.69 divādibhyah śyān, 3.1.73 svādibhyah śnuh, 3.1.77 tudādibhyah saḥ, 3.1.78 rudhādibhyah śnam, 3.1.79 tanādikṛibhya uh and 3.1.81 kṛyādibhyah snā introduce ŚyaN, etc., after verbal roots belonging to the cited groups. Rules 3.1.25 satyāp... kuradibhyo nic and 3.1.27 kaṇvādibhya yak introduce affixes NiC and yaK with reference to specific groups of roots. These rules attest to the existence of the following groups: (1) adādi, (2) juhotyādi, (3) divādi, (4) svādi, (5) tudādi, (6) rudhādi, (7) tanādi, (8) kṛyādi, (9) curādi and (10) kaṇvādi.

The last group, kaṇvādī, is treated as consisting mainly of nominal stems. Thus, we have nine classes of verb roots. A tenth class, bhvādi, is referred to by rule 1.3.1. bhuvādayo dhātavaḥ. The cumulative listing of these ten classes of roots is known as the Dhātupātha (DP). Their traditional order of listing is: (1) bhvādi (1035), (2) adādi (72), (3) juhotyādi (24), (4) divādi (140), (5) svādi (35), (6) tudādi (157), (7) rudhādi (25), (8) tanādi (10), (9) kṛyādi (67), and (10) curādi (441), with the numbers in the right-hand parentheses indicating the amount of roots in each group. In all, the DP lists 1970 roots, although it would be a mistake to conclude that 1970 roots exhaust the inventory of roots of the Sanskrit language.

The text and authorship of the DP itself is controversial. Was the DP received by Pāṇini from the tradition or did he compose it himself? Is the available text of the DP the same that Pāṇini either received or composed? Are the meaning entries in the DP post-Pāṇinian? Though these and similar questions have been raised and answered in diverse ways, there is agreement upon one point. Given the close correspondence between the root groups listed in the DP and those referred to in the grammar, that there existed a DP which Pāṇini used is established beyond any doubt.

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9 Pāṇini provides for proper selection of items from class lists by means of meta-rules 1.1.50 sthāne 'niraratah and 1.3.10 yathāsambhyam anudeśah samānām. For a detailed discussion of how 1.3.10 interacts with 1.1.50 in order to select proper substitutes under 1.1.69, see Cardona (1980).
Pāṇini refers to roots in the Aṣṭādhyāyī with their ēs. Some of these ēs condition the use of ātmanepada terminations, as in 1.3.12 anudāttānīta ātmanepadam and 1.3.72 svaritaṇūṭāh kartrabhijrāye kriyāphale. Other ēs have different functions. Rules 3.3.88 āvītal ētri and 3.3.89 ēvato thuc introduce affixes ktri and athuc when ēs D and T mark the roots. Such rules show that when Pāṇini composed the Aṣṭādhyāyī, he definitely had a listing of roots to which he could refer. Since such reference was made in view of individual groups and subgroups of roots, some form of DP necessarily was complementary to the grammar. As to whether Pāṇini used a traditionally available DP or composed his own, the answer is more likely to be the latter. For the listing of roots in groups with characteristic marks and operations serves special purposes. One can hardly believe that Pāṇini received the DP from the tradition in a form ready to be used in the Aṣṭādhyāyī in the manner in which he desired to use it. There are many things in the text which Pāṇini accepted from the tradition, but he uses them with strict adherence to the organization, structure and function of the Aṣṭādhyāyī itself. That the form of the DP which Pāṇini may have known at the time of his composing the sūtras was in strict adherence to the organization, structure and function of the Aṣṭādhyāyī is doubtful, if not incredible.

Yudhiṣṭhira Mīmāṃsaka (1973, II:545-8) has discussed in detail the question of whether or not Pāṇini listed the roots in hās DP with corresponding meaning glosses. There is evidence in the Mahābhāṣya to the effect that Kātyāyana regarded the existence of a listing with meaning glosses as non-Pāṇinian (Cardona, 1976:162). Nāgeśa suggests that meaning entries were inserted by Bhimasena. Palsule (1961:91-95) discusses this matter in detail and also concludes that the meaning entries are non-Pāṇinian. Mīmāṃsaka reaches the opposite conclusion, but his arguments are not convincing (Cardona, 1976:162).

However, some points must be discussed in this connection. First, Patañjali states that Pāṇini recites some roots with infixed n (Mb. ad 1.3.7). Nāgeśa concludes from this that some roots were recited with meaning glosses in the earlier versions of the DP (Cardona, 1976:163). Leaving aside the question of whether this earlier version was composed by Pāṇini, or was a traditional grouping, we must consider the implications of some roots being listed in different groups with different meanings. For example, vidā is listed in divādi, adādi, rudhādi and tudādi in the respective senses of existence (sattā), knowledge (jñāna), thinking (vicāra) and gain (lābha). Perhaps certain roots were recited with meanings in order to differentiate them from other roots, for meaning or operational purposes. Pāṇini may have had a special reason for reciting a set of roots with their meaning glosses, perhaps to make a bhedakattva ‘distinction’ of either semantic or operational type. However, the very listing of the same roots in different
places may account for \textit{bhedakātva}. In that case, we must conclude that no meaning glosses were put with the listings. To account for their \textit{bhedakātva}, Pāṇini resorted to different organizational and structural devices.

(c) The \textit{Gaṇapāṭha (GP)}

The \textit{GP} is an ordered listing of sets of nominal stems. These sets are of two types: some have a definite number of stems, while some are open-ended. The authorship of the \textit{GP}, as the authorship of the \textit{DP}, is in doubt. Jinendrabuddhi\textsuperscript{10} is the only commentator who, in consonance with his opposition to Pāṇini's having composed the \textit{DP}, does not accept Pāṇini as the composer of the \textit{GP}. He also states that some parts of the \textit{GP} are post-Kātyāyana. Similarly to his statements on the authorship of the \textit{DP}, however, Jinendra's statements on the \textit{GP} are self-contradictory. Consider \textit{Kāśikā} on rule 1.3.2 \textit{upadeśe'j anumāsika it}.\textsuperscript{11} \textit{Kāśikā} states that \textit{upadeśa} here refers to the \textit{Sūtrapāṭha (SP)} 'recitation of \textit{sūtras in the Aṣṭādhyāyī}' as well as the \textit{Khilapāṭha} 'appendices to the Aṣṭādhyāyī'. Jinendra (\textit{Nyāsa ad Kāś.}, 1:393) explains the \textit{Khilapāṭha} as the \textit{DP} and \textit{GP}.\textsuperscript{12} Now if one is discussing \textit{upadeśa} and the \textit{SP}, the person who made the \textit{upadeśa} surely is Pāṇini. If, in fact, the composer of the \textit{SP} and the \textit{Khilapāṭha} were different, their inclusion in \textit{upadeśa} would be questionable. Jinendra (\textit{Nyāsa ad Kāś.}, IV:10) also wonders why Pāṇini did not recite rule 5.1.3 \textit{kambalāc ca samjñāyām} in the \textit{gavādi gaṇa}.\textsuperscript{13} Now such a question is pertinent only if one believes that the composer of the \textit{SP} and the \textit{GP} are the same. As opposed to this, Jinendra clearly states on \textit{Kāśikā ad 5.3.2}\textsuperscript{14} that the \textit{GP} is non-Pāṇinian.

Yudhiṣṭhira Mimāṃsaka (1973, II:141-46) concludes after a detailed discussion of arguments that Pāṇini, while accepting material from his predecessors, did compose the \textit{GP}. Cardona (1976, II:164-67), too, discusses this problem. He correctly observes that the \textit{GP} was presupposed by the rules of the grammar. I shall reiterate here what I said in connection with my discussion of the \textit{DP}; if Pāṇini's \textit{SP} presupposed the \textit{GP}, then Pāṇini must have had a version of the \textit{GP} before him. Whether he received that version from his predecessors is not the right question. The right question is how much of Pāṇini's version of the \textit{GP} is pre- or post-Pāṇinian. One

\textsuperscript{10} \textit{Nyāsa ad Kāś.} (IV:242) on 5.3.2 \textit{kim sarvanāma...sūtrakārasyehe gaṇapāṭha nāsāv upālambham arhati}. Note, however, that this statement may also mean that Jinendra doubts the Pāṇinian recitation of this particular \textit{gaṇa} only; he may not question Pāṇini's authorship of other \textit{gaṇas}.

\textsuperscript{11} \textit{upadiśyate' nena ity upadeśah-sāstravākyāni, sūtrapāṭhah khilapāṭhas ca}.

\textsuperscript{12} \textit{khilapāṭhah = dhātupāṭhah; cakārāt prātipadapāṭhah ca}.

\textsuperscript{13} \textit{atha gavādīv eva "kambalāc ca samjñāyām" ii kasmān na paṭhati?}

\textsuperscript{14} see above fn. 10.
should remember here that Pāṇini was using the GP for a very special purpose, a purpose which had to be in perfect accord with his SP. I doubt again that Pāṇini received a version of the GP which was tailored for his SP. We cannot but accept, with Cardona and Mīmāṃsaka, that Pāṇini composed the GP.

Beside the question of the authorship of the GP, there are other questions about the order and listings of individual gaṇas. Cardona (1976:166) takes up various points raised in connection with rule 1.1.27 sarvādini sarvanāmāni. He mentions that in addition to the items sarva etc., this gaṇa also includes three rules, 1.1.34-36, of the SP. Kātyāyana\textsuperscript{15} objects that 1.1.34-36 are unnecessary in the SP as their purpose is served by their listing in the gaṇa. Patañjali concludes that these rules are required in the SP to provide the optional replacement of Jas by Śī (Mbh. 1:297). Why didn’t Pāṇini account for the optional replacement by adding one rule to the SP? This brings us to the question of carrying vibhāsa jasi from 1.1.32. There is considerable disagreement on this, but I believe that the listing of the sūtras in the GP is a later addition and that rule 1.1.32 is carried via amṛtī.

(d) The Unādisūtras (Us)

The Unādi affixes are used to derive nominal stems. Two versions of the Us are found: a paṇcapādi ‘classified in five sections’ and a daśapādi ‘classified in ten sections’. Scholars generally agree that the daśapādi is based on the paṇcapādi and hence is later.

The authorship of these sūtras, too, is debatable. However, Pāṇini mentions unādi in two of his rules: 3.3.1 unādayo bahulam and 3.4.75 tābhyāṁ anyatronādayaḥ. The first rule states that affixes uN, etc., are introduced after verb roots. Thus, kṛ + uN → kār + u = kāru + sU → kāruḥ ‘artisan’. The second rule states that Unādi affixes can also be introduced to denote kārakas other than sampradāna ‘dative’ and apādāna ‘ablative’. These two rules in the SP definitely attest to the fact that the SP presupposed the Us. There are additional rules in the SP which also attest to the existence of the affixes of the Us; for example, 3.4.74 bhimādayo’ pādāne and 7.3.85 jāgro’ vicinnaḥ. . . . This second rule orders ar as a replacement for the r of jāgr. However, this replacement is not allowed before affixes such as vi. Pāṇini does not introduce vi in the Aṣṭādhyāyī. It is an Unādi affix. The majority of scholars doubt that Pāṇini composed the Us. However, if Pāṇini’s SP presupposed it, he must have had a version of it prior to the time he composed the SP. Was that version tailor-made for Pāṇini’s SP or did Pāṇini revise and rearrange it to suit his purpose? While he may have had a version of the Us available to him from the tradition, it is most unlikely that he did not make major changes in it to suit his own purpose.

\textsuperscript{15} Mbh. (1:295) ad 1.1.34 vārttika 1.
There has been a considerable amount of work done concerning the conflict between the *Us* and the *SP*. This actually makes the presently available text of the *Us* suspect. Scholars generally agree that while Pāṇini did have a version of *Us* which he used for the *SP*, that version which was known to him was later modified.

Bhaṭṭoji lists 751 *Us* in his SK (IV:138-306) based on the description of Jñānendra Svāmin’s commentary where 325 *Unādi* affixes have been discussed. It has been stated that these affixes derive nominal stems from verb roots. It is believed that Yāska and Śākaṭāyana consider that all nouns and substantives derive from verbs and most *Unādi* affixes would become useless if this view is not accepted. Also, the derivations involving these affixes lack other derivaional details.

(e) The *Phīṣūtra* (*Phs*)

The *Phs* is a small treatise that deals with the accentuation of linguistic items that are not developed through a derivational process from underlying bases and affixes. Pāṇini presents accent rules with reference to the derivational process. For example, 3.1.3 ādyātāttaś *ca* states that an item termed *pratyaya* ‘affix’ carries *udātta* ‘high-pitch’ on its first vowel. Rule 3.1.4 *anudātta suṇḍita* states that an affix denoted by *sUP* or marked with *P* as an it carries *anudātta* ‘low-pitch’. These affixes are generally introduced after bases termed *dhātu* ‘verb root’ or *prātipadika* ‘nominal stem’. Depending upon the nature of the derivate, its underlying elements and the derivational process, further accent rules are introduced to make adjustments in the accentuation of fully derived forms. However, Pāṇini does not discuss the accent of bases.

The *Phīṣūtra* also does not discuss the accent of nominal bases whose derivation is not accounted for by a derivational process. This treatise gets its name from its first *sūtra*, *phīṣah*, which assigns a final high-pitch accent. *Phit*, the nominative singular of *phīs*, is used here in the sense of Pāṇini’s term *prātipadika*. Cardona (1976:174-77) discusses the editions and texts of this treatise along with the question of its authorship.

The consensus of the tradition is that the *Phīṣūtra*, in some form or other, was known to Patañjali and Kātyāyana. It was composed by Śantanu who certainly antedates Pāṇini. Whether Patañjali was aware of the *Phs* of Śantanu or of a different treatise dealing with the accentuation of nominal stems is a question without definitive answer. Yudhiṣṭhira Mīmāṃśaka (1973) and Kapil Deva Shastri (Cardona, 1966:176) claim that the *Phs* predates Pāṇini. This is based on the commentary of Candragomin’s grammar on the *pratyāhāra-sūtra auśN*. The commentary claims that earlier grammarians used *aś* for Pāṇini’s *a⁄c*. The *Phs* also uses *aś*, and thus, they claim, must predate Pāṇini. Cardona (1976:177) properly observes that this evidence is not enough to back the conclusion.
(f) The Liṅgānuśāsana (Lā)

This treatise deals with assigning gender to nominals based on their structure and meaning. The text of this treatise consists of about two hundred aphorisms enumerating items under the headings feminine (strīlinga), masculine (puḷiṅga), neuter (napuṃsaka), feminine-masculine (strīpuṃsaka), masculine-neuter (pumṇapuṃsaka) and variable (avīśīṣṭalinga).

As the headings imply, certain nominals can only belong to one gender: feminine, masculine or neuter. Others, however, can be used both as feminine and masculine or masculine and neuter. Finally, there is also a set of nominals which can be used in any one of the three genders.

Patañjali states in his Mahābhāṣya (1.382) that gender is not taught in the grammar since it is assumed to be known from usage (cf. Mbh. ad 2.1.36 liṅgaṃ aśīyaṃ lokāśrayatvasā liṅgasya). However, there are instances which suggest that Pāṇini did indeed discuss gender. For example, he makes the meaning condition for the introduction of certain affixes in 3.3.94 strīyām kīn, 3.3.18 pumṣi saṃjñāyāṃ ghaḥ prāyena and 3.3.114 napuṃsake bhāve ktaḥ. Such rules, however, are only indirect evidence. For direct evidence one must consider such rules as 2.4.26 paraval liṅgaṃ dvandvatatpurṣayaḥ.

It has been stated that the Lā enumerates items and assigns their gender in view of their structure and meaning. For example, māṭrī ‘mother’, duhitṛ ‘daughter’, svāṣī ‘sister’, potṛ ‘granddaughter’ and nanaṇḍī ‘husband’s sister’—these five bases which end in ī are feminine (cf. Lā 3:māṭruduhitṛ...). A following rule states that items derived by introducing affixes aṇī and ā after roots are also feminine. Thus we get saraṇī ‘street’, dharaṇī ‘earth’, etc. (cf. Lā 4: anyāpratyayāto dhātuḥ). Similarly there are rules which assign gender with reference to meanings. For example, dundubhi ‘a large kettle-drum’ when used in the sense of aṅṣa ‘dice’ is treated as feminine. So is nābhi ‘navel’ when it does not refer to a kṣatriya ‘warrior’. However, elsewhere dundubhi and nābhi are both treated as masculine (cf. Lā 14-16: dundubhir aṅṣa — ubhāv anyatra pumṣi).

Most scholars rightly believe that the text of the Lā was not composed by Pāṇini. There are two types of evidence for this. One relates to the inclusion of gender among things which the grammar treats as aśīya; the other involves conflicts found between the grammar and the Lā with respect to the assignment of gender. However, there are some, Mīmāṃsaka for example, who believe that Pāṇini did compose the Liṅgānuśāsana. For details, see Mīmāṃsaka (1973:II:256ff) and Cardona (1976:177-79).

The brief account of the related texts of the Aśṭādhyāyī given in this chapter largely follows the accounts offered by Cardona (1976) and Mīmāṃsaka (1973, II). Interested readers may refer to these works for further details.

16 See Čārudeva Śāstrī (1973, 5:503-87) for references to Lā.
Considerable discussion has already occurred in modern linguistics about the exact characterization of the notion of grammar and rule. Scholars of Pāṇini have recently shown a great deal of interest in these issues especially as they relate to the Aṣṭādhyāyī. Pāṇini himself does not formulate any direct statements concerning these issues. However, starting with the Mahābhāṣya of Patañjali, we find an unbroken tradition of commentaries on the Aṣṭādhyāyī and related texts, a tradition rich in contents and details that pertain not only to the Aṣṭādhyāyī but, in many respects, to linguistic theory in general. I shall try to present some of the basic themes underlying the notions of grammar and rule as they have been discussed in the Pāṇinian parlance. An attempt will then be made to see how the Aṣṭādhyāyī functions as a grammatical device. This will necessarily include a discussion of certain similarities which one may be tempted to establish between the Aṣṭādhyāyī as a grammatical device and the current models of grammatical description.

The Mahābhāṣya begins with the statement: atha śabdānusāsanam “here begins the instruction about words”. This aphorism, perhaps more than anything else, is responsible for grammar being called śabdānusāsana. In answer to the question ‘what kind of words?’, Patañjali replies: “both Vedic as well as classical Sanskrit.” Thus grammar is viewed as a discipline which instructs about words of classical and Vedic Sanskrit. How, however, one should approach the instruction about, or understanding of words. Should one start by taking individual words and explain them till the totality of words in the language is exhausted? Patañjali does not approve of this technique of pratipadapātha ‘recitation of each and every word’, mostly because it would require several lifetimes with the end still not in sight. It is said that Brhaspati, the ideal teacher, taught Indra, the ideal student, for a thousand heavenly years employing this means of reciting individual words, yet they could not see the end. What then of us human beings — if one lives long it is at most a hundred years.1

Patañjali tackles the question of finding a suitable means for

1 Mbh. I, 1-5: atha śabdānusāsanam...keśām śabdānām. laukikānām vaśīkānām ca...kim śabdānām pratipatatau pratipadapāthah karttivat...anabhvypāya esa śabdānām pratipatatau pratipadapāθah. evam hi triṣyaṁ, brhaspaṁiś indrāya divyaṁ varṣasahasram pratipadośkānām śabdānām sabdāpārōyaṁnaṁ pravāca nāntam jagāma...kim punar adhyate. yaḥ sarvathā ciraṁ jivati varṣaśatam jivati.
understanding words. He proposes that a set of rules (lakṣaṇa) should be formulated based upon the principle of general (sāmānyya) and particular (viśeṣa). He argues that this will enable us to understand the enormous mass of words with little effort. The Mahābhāṣya discussion now focuses on characterizing the general and particular aspects of rule formulation. The idea is to make generalizations about words such that a general rule is formulated with reference to related exceptions. What should be the basis for making these generalizations — loka 'usage'. In other words, the grammar should treat usage as the standard or norm from which generalizations are abstracted.² The question then is raised about which people’s usage should be considered. Patañjali identifies them as śiṣṭa 'wise, learned' and characterizes them as those venerable brāhmaṇas who live in this home of the Āryas, whose grain is only one earthen pitcher, who are not greedy, who have not seized upon a cause but who, for some reason or other, have gone to the end of some field of knowledge or other.³ This description of a śiṣṭa is based largely on niiviṣa 'residence' in Āryāvarta and ācāra 'conduct' notions, many would consider non-linguistic.

One can safely assume in view of the preceding discussion that the Aṣṭādhyāyī is a set of rules formulated from generalizations which accept usage as norm. The purpose of these rules is to give instruction about words. This last needs some explanation. The Aṣṭādhyāyī formulates rules to account for correct Sanskrit usage. This usage may be characterized as a set of sentences. However, since the Aṣṭādhyāyī, based upon the testimony of Patañjali, accounts for words, how could it be treated as accounting for Sanskrit usage characterized as a set of sentences? The reason grammar may be called a set of rules which account for sentences is primarily strategic. Nāgēśa claims that it is impossible to explain the extent of individual relata and meanings reflected in separated sentences by any briefer means. Hence a different strategy has to be employed. The strategy is to make a theoretical assumption and split up the constituency of a sentence.⁴ The reference obviously is to words. Furthermore, these words should be subjected to additional analysis in terms of their components, namely bases (prakṛti) and affixes (pratyaya).

² Ibid.:6: katham tarhīme sabdāḥ pratipattavyāḥ kimicit sāmānyaviśeṣavāl lakṣaṇam pravarttayam yenālpena yatnena mahato mahataḥ sabdaughāṁ pratipadyeran. sāmānyenotarsaḥ karttavyaḥ tasya viśeṣenāpavādah.
³ Ibid.: estasminni āryadeśe ye brāhmaṇāṁ kumbhidhānyāṁ alolepā agrhyamānakāranāṁ kimcit antarena kasyāścid vidhyāḥ pārāgās tatrībhavantaḥ śiṣṭāḥ.
⁴ Paramalaghumaniyūsa, 4: tatra pratīväkyam samketaagrahaṇāsambhāvāt tad avvāhyanāya laghihiṇyena asaṣṭatvāt ca kalpanaḥ padāni pravibhajya pada prakṛtipratyayavibhāgakalpana kalpiṭābhyaṁ anuvavavatirekābhyaṁ tat tadarthavibhāgaṁ šāstramātravivṛtyaṁ parikalpheyanti smacāryāḥ.
This analysis, based upon the abstraction of sentences constituted by bases and affixes, is guided by the principle of *anuṣaya* 'concurrent presence' and *vyātireka* 'concurrent absence'. Nāgēśa is quick to remind us that such divisions are strictly *kalpanā* 'theoretical assumptions' and that *śāstra* 'grammar' is their only domain. This is enough to indicate that the grammar accounts for sentences of the language although it employs the description of words as a tool. Details of this observation will be taken up later. I shall now summarize the basic ideas of traditional grammarians concerning the notion of grammar.

(a) Grammar is a set of rules formulated based upon generalizations abstracted from usage.

(b) The function of grammar is to account for the utterances of a language in such a way that fewer rules are employed to characterize the infinite number of utterances.

(c) The *Aṣṭādhyāyī* accepts the language of the śiśa's as the norm for usage.

(d) The *Aṣṭādhyāyī* accounts for the utterances of the language by first abstracting sentences and then by conceptualizing the components of these sentences as consisting of bases and affixes. Needless to say, the network of bases and affixes, and the subsequent operations which derive the components of sentences, are the product of the grammarian's own imagination.

Pāṇinian *śūtras* differ substantially from what we are familiar with as rules in modern linguistics. Usually a 'rule' is self-contained, but a *śūtra* is not. A *śūtra* is supposed to be in ambiguous, comprehensive and objective, also brief and precise. To many this sounds paradoxical. Actually, Pāṇini formulated his rules with utmost brevity and algebraic condensation. This brevity, however, was not to be achieved at the expense of clarity. Thus, Pāṇini needed a mechanism whereby *śūtras* could be clearly understood. He chose the technique of context-sharing (*ekavākyatā*). Pātañjali is correct when he says that two rules do not become different simply because they happen to be placed in different places in the grammar; they may share a single context.\(^5\) This suggests an interdependency lacking in rules in modern linguistics where they tend to be self-contained, with independent interpretation and application.

This interdependency among rules is of two types: intradomain and interdomain. The second operates within a given domain whereas the first may operate across the domain boundaries. The interdomain dependency is attested to by the metalinguistic device of *anuvṛttī* 'recurrence'. The express function of *anuvṛttī* is to relate preceding rules of a domain to its following rules. That is, *anuvṛttī* allows a controlled reading of a former

\(^5\) (*Mbh.* III:392) na *vidēśastham iti kṛtvato nānāvākyāṁ bhavati. *vidēśastham api sad ekāṁ vākyāṁ bhavati.*
rule, or part of a former rule, in the interpretation or application of a subsequent rule. It thus helps reconstruct the shared context of a given rule within a domain.

Let us consider an example. Rule 3.1.62 acaḥ karmakarttari is composed of two padas where the first (acaḥ) ends in paṅcamī ‘fifth triplet’ and the second (karmakarttari) in saṃtapī ‘seventh triplet’. This sūtra cannot make any sense unless sūtras 3.1.1 pratyayāḥ, 3.1.2 paraś ca, 3.1.22 dhātor ekāco…, 3.1.43 cī luni, 3.1.44 cēh sic, 3.1.60 cīn te… and 3.1.61 dipajana…anyatarasyām contribute their elements towards its proper interpretation. A concatenation of all the elements brought via anuvṛtti to 3.1.62 produces the following string where I also indicate the nominal endings attached to the individual padas.

Pratyayāḥ 1/1 paraś ca 1/1 dhātoḥ 5/1 luni 7/1 cīn 1/1 te 7/1 anyatarasyām 7/1 acaḥ 5/1 karmakarttari 7/1

I now present the vṛtti of this sūtra.

ajantād dhātoḥ parasya cēh pratyayasya karmakarttari taśabde paraśaṁ cīnādeo bhavaṁ anyatarasyām

“Affix CLI optionally is replaced by CIN when the former occurs after a verb root ending in aC (a vowel) and when ta, a replacement of LUṆ which denotes karmakartṛ ‘object treated as if agent’ follows”.

It is obvious that 3.1.62 cannot be properly interpreted without the help of the previous seven rules contributing elements via anuvṛtti. There are yet additional rules which must also be brought close to 3.1.62 for its proper interpretation. Sūtra 3.1.62 orders a replacement in the form of $X \rightarrow Y/Z$ where $X$ is replaced by $Y$ when $Z$ follows. Thus $Z$ forms the right context of this replacement. However, since not every $X$ should be replaced by $Y$, $X$ must be qualified; it will be termed the left context of replacement. In the example on hand, $ta$, a replacement of LUṆ denoting karmakartṛ, forms the right context while a verb root ending in a vowel (aC) forms the left context. How do we know this? The answer is: from rules of interpretation such as 1.1.67 tasmād ity uttarasya, 1.1.66 tasminn iti niridṣṭe pārvasya and 1.1.49 saṣṭhi sthāneyogā, etc. These rules, however, do not come via anuvṛtti; they must be brought by means of some other device. I shall discuss this with reference to intradomain dependency among rules.

The device for reconstructing the shared context of related rules to which Pāṇini alludes in his statement on ekavākyatā is to be implicitly assumed. I have termed this reference to antecedent. Pāṇini claims that rules placed in two different places in the grammar may share the same context of application. For example, Pāṇini presents most of his definitional and interpretational rules in the first book. If a given definitional or interpretational rule is required for the interpretation and application of
an operational rule elsewhere in the grammar, the grammar must have some way of bringing them together. My idea of a reference to antecedent as an implicit device derives from Pāṇini’s own practice of relating definitional terms to operational rules in a way that not only facilitates interpretation of these rules but also serves as a guide for determining further steps in derivation. The following convention summarizes the function of this implicit device.

Any term encountered in a rule while scanning a domain for possible rule application triggers the process of reconstructing a referential index (RI) for that term. A given RI refers to the antecedent of that term by computing all its previous occurrences in the grammar and consequently bringing information close to the rule which triggers the RI computation.

The device of reference to antecedent thus brings rules from across the domain boundaries by means of the RI computation (see chapter 4 for details of RI operation).

Given the fact that a sūtra is very brief and concise, and that it depends on other sūtras for its proper interpretation and application, a sūtra should be interpreted as a sentence. Obviously, it necessitates retrieving required information from elsewhere. Thus, a sūtra when fully supplied with all the information required for its application, becomes a statement. A rule is not necessarily a statement as it is not written in the sūtra style per se and also because it entails practically no information retrieval. This may be reason enough to distinguish between a sūtra and rule. However, I prefer to use them both in the sense of a rule for ease of reference.

Contemporary linguists generally formulate rules with a single operation. Pāṇini has formulated many rules with two operations to be performed concurrently. Consider the following rules.

3.1.11 karttuc kyaṅ salopaś ca
“The affix KyaN occurs optionally to denote ācāra ‘conduct’ after a pada ending in a SUP and denoting an upamāna ‘standard of comparison’ as agent; in addition, finals of a nominal stem is replaced by zero (LOPA).

3.1.12 bhṛṣādibhyo bhuvy acer lopaś ca halah
“The affix KyaN occurs optionally to denote the sense of bhū ‘to be, become’ after nominal stems enumerated in the list headed by bhṛṣa ‘more, bountiful’ providing these stems did not end in the affix Cvi; in addition, the stem final consonant (hL) is replaced by zero”

3.1.80 dhinvikṛtyvaḥ a ca
“The affix u occurs after verbal roots dhinvi ‘to please, be pleased’ and kṛyā ‘to hurt, injure’ when a sārvadhātuka affix denoting karttuc follows; in addition, the root-final sound is replaced by a”

3.1.108 hanaś ta ca
“The affix KyaP occurs to denote bhāva ‘action’ after the verbal root han
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'to kill' used without a preverb and co-occurring with a pada ending in a sUP; in addition, the root-final n is replaced with t'

3.1.39 bhūṛbhūṛhuvam śūvac ca

"affix ām occurs optionally after verbal roots NiLbhī 'to fear,' hri to be bashful, ashamed,' DūbhṛNī 'to hold, provide for' and hu 'to offer ritual oblation' providing LIT follows and the usage is not Vedic; in addition, these roots undergo operations similar to ones which occur when ŚLU follows."

The first four rules require specific deletion or replacement operations in addition to the introduction of an affix. The last rule does not specify a single operation. Instead, it directs operation(s) similar to those conditioned by another item. These operations specifically are doubling (dvītva; 6.1.10 śau) and i-replacement (itva; 7.4.76 bhṛnām it). The first four operations can be performed simultaneously whereas those required by 3.1.39 cannot. Cardona (unpublished 1962: 12) interestingly distinguishes within the group of rules which order two operations simultaneously. With supporting evidence from Jñendrabuddhiś Nyāsa ad Kāśikā 3.1.11, he states that rules such as 3.1.11 and 3.1.12 form a type where the two operations do not presuppose each other. Thus, the deletion of s ordered by 3.1.11 presupposes the introduction of affix KyaN but not vice versa. Contrary to this, operations ordered by rules such as 3.1.80 and 3.1.108 both presuppose each other. Cardona also points out that the first type entails two operations where one is major and the other is subsidiary, and it is the subsidiary operation (deletion of s in 3.1.11) that always presupposes the major one. The second type where the two operations both presuppose each other entails operations of equal status.

Commentators also make a distinction between elements stated by these rule types. For example, the elements introduced by two operations enjoying equal status are characterized as sāmnīyogaśiṣṭa 'ordered in conjunction'. Elements introduced by two operations where one is principal and the other secondary are characterized as pradhānasaṃśiṣṭa 'ordered as principal' and anvācayaśiṣṭa 'ordered as secondary' respectively. These distinctions entail certain consequences. For example, if an element characterized as sāmnīyogaśiṣṭa is removed, the other element concurrently introduced must also be removed. Rule 4.1.49 indravaruṇa ... introduces the feminine affix NiP simultaneously with the augment ānUK. Thus we get: indra + ānUK + NiP = indra + ān + i = indrāṇī 'Indra's wife'. However, in deriving the compound pañcendra 'a mantra whose deities are five Indrāṇis' from pañcana + Jas + (aN → φ) = pañcendrāṇi, we find that the feminine affix NiP must be deleted by 1.2.49 luk taddhita luki. Since NiP was introduced simultaneously with ānUK as sāmnīyogaśiṣṭa, ānUK must also be deleted. The result is: pañcendra (ān → φ) (i → φ) = pañcendra. Note here that
the deletion of ānUK and ĀīP will not yield the string *pañcendr; instead it will restore the final a of indra as this a was there when ānUK and ĀīP were introduced.

Pāṇini arranges his rules in domains sequentially. However, when it comes to application of rules, he also resorts to non-sequential ordering. The express purpose of sequential ordering is to help strings locate domains of possible rule application. Elsewhere the ordering may or may not be sequential. Rules in modern linguistics are arranged and applied sequentially, though with certain intrinsic or extrinsic constraints. The notion of cyclic application of rules is also different in Pāṇini. Cyclic rules in contemporary linguistics are formulated based largely upon input conditions. Pāṇini’s rule cycles, however, are constrained primarily by output conditions. One must of course remember that the notion of cyclic rules is still not fully developed.

The notion of ordering and cyclic application is closely related to rule interaction. Commentators have identified several categories of rules where operational rules are largest in number. The degree and type of rule interaction depends mostly on the derivates. Consider the following rules.

1.4.1 ā kaḍārād ekā samjñā
1.4.2 viprātiṣedhe param kāryam
1.4.24 dhruvam apāye’ pādānām
1.4.42 sādhakatam jan karanam

Rule 1.4.1 requires that only one term should be assigned to a single nominatum (samjñin). The next rule states that, in matters of conflict, a rule which is subsequent (para) in order wins. Now consider the following sentence.

(1) rāmo dhanusā mṛgaṁ vidhyati
   ‘Rāma is piercing the deer with the bow’

The word dhanus ‘bow’ can qualify for the assignment of both apādāna ‘ablative’ and karaṇa ‘instrument’. Given an action denoted by vyadha ‘to pierce’, dhanus can serve as the fixed (dhruva) point from whence movement away (apāya) of arrows (śara) occurs. It can also be viewed as the most effective means (sādhakatama) since arrows cannot be shot without it. There is clearly a conflict between rules 1.4.24 and 1.4.42. Rule 1.4.2 is invoked to resolve this conflict on the basis of paratvā and consequently dhanus is assigned the term karaṇa by 1.4.42. The order of rule placement thus becomes a factor in determining the relative strength of rules.

It must be remembered here that the conflicts which 1.4.2 resolves are identified as tulyabalatā ‘equal strength’. Such strength obtains between rules which are sāvakhāśa ‘with scope of application elsewhere’. Conflicts where one of the rules happens to be niravakhāśa ‘without any scope of
application elsewhere' are not covered by 1.4.2. Commentators also observe that conflicts between nitya ‘obligatory’ and para, antaraṅga ‘internally conditioned’ and para or nitya, and āpavāda ‘exception’ and para, nitya or antaraṅga rules are not covered by tulyabalatā. Hence, such conflicts cannot be resolved by 1.4.2. Pāṇiniyas recognize a paribhāṣā in this regard:

pūrvaparanityāntaraṅgāpavādānāṁ uttarottara balīyaḥ.

This is clearly an effort towards setting hierarchical relations among rules (see chapter 5 for details on these rule types).

It has already been stated that the Aṣṭādhyāyī is a finite set of ordered rules which is capable of characterizing an infinite number of correct Sanskrit sentences. It is important to realize here that the Aṣṭādhyāyī is designed to characterize only correct Sanskrit sentences. A question may be raised here whether sentence analysis should be based on correct or incorrect usage or both. Patañjali observes that only one type of usage, either correct or incorrect, should form the basis for analysis. After all, since the two sets are mutually exclusive, by analysing only one, namely correct usage, the second set, incorrect usage, will become known as what is excluded. This practice has a parallel in the outside world. If someone specifies what should not be eaten, what should be eaten becomes clear. In the same way, if one specifies what should be eaten, what should not be eaten also becomes known. Thus, by specifying that only five of the five-nailed should be eaten, the others which should not be eaten, become known. Similarly, if one says that a village pig should not be eaten, one understands that one found in the jungle can be eaten (Mbh. 1:23). In the same way, by analysing correct usage one automatically knows incorrect.

Answering the question which usage, correct or incorrect, should form the basis of analysis, Patañjali says that analysis based on correct words is preferred as it is economical. That is, fewer rules are needed to explain correct usage than incorrect usage. After all, a single correct word may have many corresponding incorrect words. Besides, use of correct words brings merit.⁶

The correct words which Patañjali recommends as forming the basis of analysis are further qualified. They must be taken from usage. An interesting discussion follows this. It centres around the question whether there are words which are not found in usage, and if so whether such words should be included in the analysis. Patañjali accepts that there are words which may not be found in usage but that should be included. This appears to directly counter the idea of analysis based on usage. After all, since words exist to convey meanings, if they are not used and hence do

⁶ Mbh. pas.: kim punar atra jāyāḥ. laghutoś ca caḥ bādopadesāḥ. gariyān apāsabdopadesāḥ. ekaikasya bahavo' pabhramśāh...
not convey meanings; the question of their existence or analysis is vacuous. Patañjali explains that the scope of usage must be taken as widely as possible. Efforts should be made to ascertain whether a particular word exists in usage. Doubt expressed about the existence of a word simply because it has not conveyed meaning is not sufficient since many other words can be used to convey the same meaning and the meaning is thus expressed. Many words had an antique usage such as in the ritual of dirghasattra but are no longer used. Similarly, there are words which are used in other places. The scope of usage is indeed very wide; great effort must be expended in ascertaining whether words exist in usage. In short, even though a particular person may not use a particular word, or a word may not be current in a particular area at a particular time, it does not mean that the word did or does not exist in usage (Mbh. 1:37-38).

Pañini believed in the authority of words (usage). The rules of the grammar are formulated to capture generalizations reflected in usage, and obviously generalizations necessary for the formulation of general rules and their particular exceptions are impossible to abstract from incorrect usage. Consequently, incorrect sentences cannot be treated as norm. This amounts to saying that the grammar is not capable of characterizing the infinity of incorrect utterances.

It is not out of place to indicate here that the Sanskrit grammarians were aware of issues concerning grammaticality and acceptability. Judgments relating to grammaticality and acceptability are not to be treated as depending on the native speaker’s intuition. Sanskrit grammarians pay much attention to the usage and the vivakṣā ‘intent’ of the speakers. Thus, it is not surprising to find grammatically correct though semantically deviant sentences similar to Chomsky’s “colorless green ideas sleep furiously” discussed by Sanskrit grammarians.⁷

\[
\text{esa bandhyāsuto yāti khaṭuspakṛtaśekharah} \\
\text{kūrmakṣiracaye snāto śaśasṛṇagadhanurdharah}
\]

“There goes the son of a barren woman with his hair-top bedecked with sky-flower, bathed with the milk of a tortoise carrying a bow made of the horn of a rabbit”.

Such usages are grammatically approved though treated as kalpanā ‘imagination’ and hence, regarded as falling outside the scope of normal usage. Since the Sanskrit grammarians do not bother themselves with the intuitive knowledge of the native speakers, they do not consider it necessary to go deeper into grammatical or semantic deviance. They adhere to the usage of the sūtras as norm.

It has been stated that the Aṣṭādhyāyī characterizes sentences. However,

⁷ Chomsky (1957:15).
⁸ (PLM:37).
it has also been observed that this characterization is dependent upon the analysis of words by means of bases and affixes. Thus, the Pāṇinian grammatical device treats words as its ultimate derivate. This observation may create the impression that the Āstādhyāyī is a morphologically-based descriptive grammar. It will also raise a question about the status of syntax in Pāṇini. Above all, it will bring into question whether Pāṇini can derive sentences. I have claimed, with support from Nāgēśa, that Pāṇini employs word derivation as a tool to derive sentences. Why doesn’t Pāṇini derive sentences directly? I think his strategy is quite obvious. The question loses its appeal for him since his attempt to derive a sentence per se would necessarily require him to provide all information relative to word derivation. Furthermore, this attempt will also fail miserably in providing anything significantly different from what his word derivation would have already provided. Pāṇini derives words with reference to the conceptual structure (CS) of sentences. This procedure consequently enables him to derive sentences, even though he does not consider the sentence to be either the starting point or the terminal point of his derivational device.

The Pāṇinian derivative model is built around two basic though interrelated constructs: conceptual structure (CS) of sentences and lexicalization. No sentence can be derived unless there is a clearly established CS for it. Since action (kriyā) forms the central denotatum of Sanskrit sentences, their CS must be established with reference to action. Action requires participants (kārakas) for bringing it to fulfilment. Pāṇini sets up six categories of kārakas: apādāna ‘ablative’, sampradāna ‘dative’, karaṇa ‘instrument’, adhikaraṇa ‘locus’, karman ‘object’ and karta ‘agent’. The theory of action and participants makes it obligatory for each CS to underlie an agent and an action. Thus the agent is a priori given by the theory. Other participants may or may not be involved in a given action depending on the nature of that action and the co-occurrence conditions imposed upon the participants. Let us consider the CS of sentence (2).

(2) rāmo vane sītvayai dhanuṣaṁ mṛgāṁ vidhyāti

The CS of this sentence is built around the action of piercing in which Rāma, the agent, is engaged at the current time. The act of piercing is denoted by the verb root vyadh ‘to pierce’. This particular action, of its own nature, may permit the involvement of participants such as apādāna ‘ablative’, sampradāna ‘dative’, karaṇa ‘instrument, adhikaraṇa ‘locus’ or karman ‘object’. In essence, this action permits the involvement of participants which other actions may not allow. We can represent the CS of sentence (2) as follows:

CS₁: Action₁ (vyadh): Agent, Dative, Instrument, Locus, Object

The role of ablative in this CS₁ is recognized although one can argue that since dhanuṣ ‘bow’ can serve as the point from which the movement away
(apāya; 1.4.24 dhruvam apāye' pādānam) can take place, dhanuṣ should be assigned the term apādāna. An argument counter to the preceding can also be forwarded. Since one cannot shoot an arrow to accomplish the act of piercing without using the bow, dhanuṣ should be assigned the term karaṇa 'instrument'.

There is clearly a conflict here. The same dhanuṣ which may qualify for the apādāna may also qualify for the term karaṇa. Rule 1.4.1 ā kāḍārād ekā samjñā governs the assignment of terms in the kāraka domain. It would not allow the assignment of two terms to a single entity. Rule 1.4.2 vipraṭiśedhe param kāryam must be invoked here to resolve the conflict. Accordingly, dhanuṣ must be uniquely termed karaṇa on grounds that the rule which assigns the term karaṇa is subsequent to the one which assigns the term apādāna.

It is at this stage that the process of lexicalization occurs. It starts with the plugging in of lexical items which may specify the abstract categories of participants named in the CS. It should be carefully noted here that specifying these categories with lexical items does not automatically accomplish the expression of roles they play in the CS. This distinction between ‘naming’ and ‘expressing’ will become clear momentarily. In the meantime, let me briefly outline the kinds of lexical items which are recognized by Pāṇini. They fall into two categories: prāti-padika ‘nominal stem’ and dhātu ‘verb root’. Pāṇini defines these terms as follows.

1.2.45 arthavād adhātur apratayayah prātipadikam
‘a non-root, non-affixal unit with meaning is termed prātipadika’
1.2.46 kṛt-taddhita-samāsāś ca
‘a unit which either ends in a kṛt (3.1.93 kṛt atiṁ) or taddhita (4.1.76 taddhitaḥ) affix, or is a samāsa ‘compound’ is also termed prātipadika’
1.3.1 bhūvādyo dhātavah
‘units headed by bhū ‘to be, become’ and the like, are termed dhātu ‘verb root’
3.1.32 sanādy-antā dhātavah
‘units which end in affixes saN, etc, (3.1.5 gup-tij-kidbhyaḥ...) are termed dhātu’

The above listings give us a total of six types of lexical items grouped under two categories of nominal stem and verb root. Rule 1.2.46 enumerates three types of stems which are to be derived from units underlying simple bases. Roots of the class characterized by 3.1.32 also fall within the derived category. Lexical insertion in a given CS may involve any of the above bases as desired.

Returning to CS₁, we find the following representation after the lexical insertion of the bases has been completed.
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\( CS_1 \): Action\(_1\): \( vyadh \) (dhātu: hereafter \( D \))
Agent, Dative, Instrument, Locus, Object
\( rāma \) (prātipadika: hereafter \( P \))
\( sītā \) (\( P \)) \( dhanuṣ \) (\( P \)) \( vana \) (\( P \)) \( mṛga \) (\( P \))

The next step in the process of lexicalization is to express, by means of affixes, the relations named above. It should be noted here that a relation, especially a \( kāraka \) relation, though potentially (inherently) named by an action, depending on the intention of the speakers may not be expressed by lexicalization. Thus, in the \( CS_1 \), the action denoted by \( vyadh \) names or potentially inheres agent, object, instrument, dative, ablative and locative. A speaker may not wish to particularize or identify entities which may be capable of serving as object, instrument, etc. For example, a speaker may not wish to particularize \( dhanuṣ \) as \( karaṇa \). With the exclusion of \( karaṇa \), sentence (2) can become

(3) \( rāmo \ mṛgā\( m \) \( vidhyati \ vane sītāyai \)

‘Rāma is piercing the deer in the forest for Sītā’.
Similarly, the speaker may even wish to exclude a particular reference to the agent Rāma, thereby reducing the sentence to

(4) \( mṛga\( m \) \( vidhyati \) sītāyai \( vane \)

‘... is piercing the deer for Sītā in the forest’.
Sentences (5) and (6) exclude dative and locative.

(5) \( mṛga\( m \) \( vidhyati \) \( vane \)

‘... is piercing the deer in the forest’.

(6) \( mṛga\( m \) \( vidhyati \)

‘... is piercing the deer’
These exclusions do not mean that the action denoted by \( vyadh \) does not name the deleted \( kārakas \). Instead, it merely implies that even though the action potentially inheres or names these participants in the action, the speaker may not wish to particularly identify them in a given sentence. This is the basis for maintaining a distinction between the processes of naming and expressing. Expressing also goes beyond particularizing. That is, the identification of \( kārakas \) by specific bases doesn’t mean that the named \( kārakas \) have also been expressed. For example, consider the following sentence.

(7) \( rāmeṇa \ mṛgo \( m \) \( vidhyate \) sītāyai \( vane \)

‘a deer is being pierced by Rāma in the forest for Sītā’.
Sentences (7) and (3) both mean the same thing; the only difference is the way these sentences express their agent or object. Sentence (3) expresses
the agent by using the active ending \textit{ti} with the verb. Sentence (7) expresses the same agent by using the third triplet of nominal ending (\textit{bhāya}). Similarly, the object which is expressed by using the second triplet of nominal ending (\textit{dvitīya}) in (3) is expressed by introducing affix \textit{ya} to the verb in (7). Agents and objects can either be expressed by post-verbal endings or other affixes. Other \textit{kāra}kas can be expressed by nominal endings or other affixes. This proves that an action may name a \textit{kāra}ka, lexical bases may identify them, but there will still remain the question of how they shall be expressed. It is for this reason that naming and expressing have to be treated on different levels.

Let us now return to the derivation of sentences (2) and (7). I reproduce here the string with lexical insertion already accomplished.

(2) \textit{rāma} (agent: \textit{P}) \textit{vyadh} (\textit{D}; \textit{vana} (locus, \textit{P})
\textit{sītā} (dative: \textit{P}) \textit{dhanu}ṣ (instrument: \textit{P}) \textit{mrga} (object: \textit{P})

Note here that the terms \textit{pratipadika} (\textit{P}), \textit{dhatu} (\textit{D}) and \textit{kartṛ} ‘agent’, etc., are assigned by the grammar, among other things, to guide the strings to the domain of possible rule application. This relationship between the assignment of a term and scanning of domains for possible rule application will be discussed in the chapters 4 and 6. Suffice it to say here that the root \textit{vyadh} and other items termed \textit{pratipadika} are sent respectively to the domain of 3.1.91 \textit{dhāto}h and 4.1.1 \textit{iyāp-pratipadikāt} for possible rule application. The result will be:

\textit{rāma} + \textit{sU}, \textit{vana} + \textit{Nī}, \textit{sītā} + \textit{Ne}, \textit{dhanu}ṣ + \textit{Tā}, \textit{mrga} + \textit{am}, \textit{vyadh} + \textit{LAT}

The string \textit{vyadh} + \textit{LAT} will yield \textit{vyadh} + \textit{ya} + \textit{ti} where first \textit{LAT} will be replaced by \textit{tiP} and subsequently (\textit{SyaN} = \textit{ya}) will be introduced. There are three things which must be noted in connection with the replacement of \textit{LAT} by \textit{tiP}. First, \textit{LAT} is one of the twelve abstract affixes termed \textit{LA} and introduced after transitive verb roots when either \textit{kartṛ} or \textit{karman} ‘object’ is denoted. It is introduced after intransitive roots to denote \textit{kartṛ} or \textit{bhāva} (3.4.69 \textit{lāh karmanī ca bhāve cākarmakebhyaḥ}). Second, the decision whether a \textit{LA} affix denotes \textit{kartṛ}, \textit{karman}, or \textit{bhāva} is made at the time when 3.4.78 \textit{tiptasjhi}… applies to replace it with a \textit{tiN}. Finally, \textit{tiN} is a set of eighteen endings from among which only one may be selected to replace a \textit{LA}.

The nominal affixes \textit{sU}, \textit{Nī}, \textit{Ne} and \textit{am} are introduced by 4.1.2 \textit{svaujas}… in the domain of 4.1.1 \textit{iyāp-pratipadikāt}. These affixes denote diverse \textit{kāra}ka and non-\textit{kāra}ka relations and their selection is constrained by, among other things, rule 2.3.1 \textit{anabhīhite}. This rule requires that these affixes should be introduced only when their denotatum is not already expressed by some other means. Consider the selection of \textit{sU} after \textit{rāma}, which is the named agent. Now, \textit{vyadh} is a transitive verb whose \textit{LAT} is replaced by \textit{tiP} to denote agent. An attempt to express \textit{kartṛ} by means of
a nominal ending will be clearly in violation of 2.3.1 since tiP of vyadh + ya + ti would have already expressed it. This selectional constraint clearly establishes an interdependency between the expression of agent, object, and bhāva by a verbal inflection, and the expression of katr and karman by the nominal endings. Thus, sU introduced after rāma, the nominal which specifies the katr, does not express katr. Instead, it expresses only the nominal stem notion (2.3.46 prātipadikārthalingaparimānaṇavacanamātre prathamā). The condition laid down by 2.3.1 must also be met in connection with the introduction of the other nominal endings. Consider the following string which underlies (7).

rāma + Tā, vana + Ī, sītā + Ñe, dhanuṣ + Tā, mrga + sU, vyadh + (LAT → ta)

The affix LAT of vyadh + LAT is replaced here with ta, which subsequently conditions the introduction of ya to yield the string vyadh + ya + ta. This ya expresses karman which then cannot be expressed by introducing am after mrga. However, since the agent is not expressed elsewhere, affix Tā must be introduced after rāma to denote it. Aside from showing the interdependency between the expression of agent and object by verbal or nominal endings, the derivation of (2) and (7) reveals one other point of interest: namely, that the derivation of (2) and (7) starts with the same two steps, i.e., the assignment of kāraka terms and lexical insertion of bases. They later develop differently depending on whether the verbal ending expresses agent or object.

Once the string reaches the step where the nominal and verbal endings have been introduced, the derivation becomes largely automatic. Some of the theoretical implications of the derivational details, however, must be discussed. First, let us consider this summary of the derivational scheme.

(a) action : agent
(b) action₁ : agent₁ plus the other kārakas which action₁ may name = CS₁
(c) lexical insertion of bases identifying action₁ and the named kārakas
(d) lexical insertion of bases identifying units of non-kāraka relations = expanded CS₁
(e) expressing agent, object or bhāva by verbal endings
(g) expressing non-kāraka relations by means of nominal endings, post-nominal affixes, etc.

Steps (a) through (d) relate to the level of naming, (e) through (g) to expressing.

The affixes ruled after nominal bases above are conditioned by 2.3.1 anabhihite ‘when not expressed otherwise’. This simply means that such affixes can only be introduced after nominal bases when the denotatum of these affixes is not already expressed by something else. This explains why tṛīyā ‘third triplet of nominal ending’ cannot be introduced by 2.3.18
kartr̥karaṇayos tṛtyaḥ after rāma in (2) to express the agent it specifies. However, since there is nothing, including the verbal form, which expresses the object, dvitiyā ‘second triplet of nominal ending’ can be added by 2.3.2 karmanī dvitiyā after mrga to express the object it specifies. The same argument goes for all the other affixes introduced after other stems. It is my contention that forms such as mrgam can never be derived by the Āstādhyāyī unless the conceptual structure (CS) of sentences is taken into account and a reference to forms such as vidhyati is made. This shows why the derivation of words such as mrgam cannot merely be termed ‘word derivation’. What has been stated as the difficulty in deriving mrgam in (2) holds true for deriving rāmena in (7). The Pāṇinian derivational device simply cannot be considered a morphological device of either the Bloomfieldian or neo-Bloomfieldian type.

Pāṇini derives and uses some other types of forms which further support this claim. Consider the following:

(8) ātmanah putram icchati
   ‘... wishes a son of his own’

(9) putriyati
   ‘id.’

Sentence (9) consists of the single word putriyati. It is derived by introducing LAT (to be replaced by ti) after the verbal root putriya, which in itself is derived by introducing affix KyaC (3.1.8 supa ātmanah kyac) after the pada (supah) putra + am. Now, am is ruled after putra to express the object. As stated, the introduction of this affix cannot be accomplished unless reference to the CS is made. Pāṇini provides for this by outlining conditions imposed upon the introduction of affix KyaC. We understand that am must be introduced to express the karman related to an action denoted by iṣ ‘to wish’. In addition, the agent of iṣ must wish the object for himself and must also be the same as the agent named by the derived root. A CS realized in terms of bases and affixes and also meeting the above conditions is:

(10) ātman + ānas putra + am is +LAT

Sentences (8) and (9) both derive from string (10). Since Pāṇini derives (8) and (9) as optional (vā) constructions, (9) alternates with (8). Derivationally, KyaC is introduced after putra + am, a pada expressing the object, since it meets all the conditions. This should be enough to show that deriving (9) and (10) as an alternant of (8) cannot simply be considered as word derivation.

Kiparsky (1982) presents some interesting ideas concerning the derivation of sentences, nominals and elliptical constructions. He finds that, unlike grammatical models in current linguistic theory, Pāṇini does not accept that the relationship between sentences and their corresponding nominals or elliptical counterparts is derivational. That is, contrary to
current theory, Pāṇini does not derive a passive from an active, or a nominal or elliptical construction from a corresponding sentence. Instead, Pāṇini derives such parallel constructions from a common string. When it comes to deriving nominals, the transformational theory posits an expansion at the phrase-structure level for a nominal parallel to that of a corresponding sentence. The TG employs the means of the × (x-bar) convention. Pāṇini, again, does not employ any such means. He instead derives the sentence as well as its corresponding nominal from the same string. The Pāṇinian system is thus economical.

Many of Kiparsky's observations concerning this aspect of the Pāṇinian derivational mechanism are acceptable. However, his explanation of the actual mechanism whereby an underlying relation is expressed in lexical items is confusing. Kiparsky presents the mechanism of Pāṇinian derivation under the title of case, control and ellipsis. While there may not be any substantial difficulty in understanding his arguments in case of a general linguistics student, there are problems in following him for a student of Pāṇini. Consider Kiparsky's explanation of the derivation of the following sentence.

devadattah pacaty odanam

'Devadatta is cooking rice'

Kiparsky, similar to Kiparsky and Staal (1968) posits four levels in the Pāṇinian derivational schema.

Level 1: semantics
Level 2: abstract syntax (kārakas)
Level 3: surface structure (morphology)
Level 4: phonetics

I do not fully understand the representation of the above sentence at Kiparsky's level 1: semantics. Perhaps it will be a string of lexical items with diacritics or a frame with slots into which lexical items may later be plugged. Thus: devadatta (masculine, singular), odana (masculine, singular), pac. The verb root pac will be taken from the lexicon with diacritics indicating its morphological idiosyncrasies. The verb will also have a reference to time. At the abstract syntactic level, the string will involve the kārakas and LAT, yielding: devadatta (masculine, singular, agent), odana (masculine, singular, goal), pac + LAT (current time).

At the surface structure level, the string will have the nominative and accusative endings after devadatta and odana respectively. The third person singular ending ti will be placed after pac to yield pac + ti. The string may now be processed by appropriate rules at the phonetic level to yield: devadattah pacaty odanam. A difficulty arises here in connection with the verbal form pacati. Given the string pac + ti, 3.4.113 tīṇśiśi sārvadāhātukam will assign the term sārvadhātuka to ti which will then require the introduction of SaP after pac to yield: pac + a + ti. However, Kiparsky,
in a footnote, alludes to the introduction of SaP by means of the diacritics attached to the verb root pac. It is thus unclear whether the introduction of SaP occurs at the level of semantics or of morphology. I would understand it to take place at the level of morphology.

The most confusing part of this representation concerns LAT. Panini introduces LAT after a verb root and assigns it the term pratyarda 'affix'. A replacement of LAT, in the present case ti, is also termed an affix. Further rules identify it as parasmai pada or atmane pada, vibhakti, and sarvadhatuka or ardhadhatuka, etc. If LAT and its replacements are affixes, and if an affix, such as ti in Kiparsky's schema, has a place at the morphological level, LAT should be placed at that same level. Instead, Kiparsky puts LAT at the abstract syntactic level. Thus he equates the abstract syntactic level of the kārakas with the level of the affixes (LAT). Although the kārakas may be posited at the level of abstract syntax, placing an affix at that level will constitute a serious violation of the Paninian schema. Affixes, surely, belong to the level of morphology. Agreement with Kiparsky's schema would result in a mixing of Paninian levels which could hinder our understanding of how derivation actually occurs.

Panini was clearly intent upon separating lexicalization from conceptual categories of case. Confusion over the question of whether his kāraka categories are semantic or syntactic has been due largely to the fact that he defines them in semantic as well as syntactic terms. This means that anyone bent upon defining the kāraka categories on purely semantic grounds must have recourse to compromise. The evidence may indicate that these categories are syntactico-semantic, but this in no way proves that Panini mixes levels. If one insists upon the dichotomy of surface and deep structure, there may not be any disagreement about Panini's not subscribing to it; the disagreement will centre around the nature of the Paninian deep structure. It is my belief that Panini did not formulate his model in terms of deep and surface structure at all. After all, Panini's theory does not entail any network of transformations. This means that any deep structure which can be read into his model is conspicuously lacking in depth. In short, since Panini sought to maintain a direct link between the CS of sentences and their actual realization in usage, his kāraka categories cannot be viewed as constituting a level either similar to the level of general semantics or of deep syntax. For, this level would lack depth and consequently would not only erase intermediate levels but would also reduce the network of transformations.

The preceding arguments make Panini's model unique insofar as comparisons with TG, generative-semantics or case-grammar are concerned. A recent study (Roodbergen 1974) observes that "...in its derivational
aspect Pāṇini’s grammar works much like the machine mentioned by N. Chomsky in *Syntactic Structures*. Actually, the machine which Chomsky talks about in *Syntactic Structures* refers to a class of grammars generally known as *Finite State Grammar* (FSG). After listing some languages, Chomsky shows very effectively that natural languages fall outside the generative power of FSG. Chomsky rejects FSG especially because it is deficient in handling the disjunctive dependency relationship natural to human languages. If Pāṇini functions much like the machine identified as FSG and if Sanskrit can be considered a natural language, Pāṇini must suffer from the same deficiencies as any FSG. Chomsky mentions FSG to demonstrate the inadequacies of a descriptive linguistic theory such as the one presented in Hockett’s *A Manual of Phonology*. There is hardly any evidence to suggest that Pāṇini works in the same way that Hockett does.

Pāṇini’s model is also unique in that it manipulates word derivation as a tool, for reasons of simplicity and economy, to account for the derivation of sentences. For this, he does not have to posit a general semantic structure as has been suggested by Sinha, nor does he have to specify an elaborate semantic or deep structure as has been postulated by Kiparsky and Staal. His aim is not to make generalizations which may reflect the intuition of native speakers. On the contrary, he aims at making generalizations and setting up a device which can correctly derive sentences as they are used by the native speakers. Actual usages are so much more important for him that he cannot contemplate any kind of abstraction which may create a gap between the conceptual structure of sentences and their actual realization in usage (also see Sharma:1978).

Pāṇini’s *Aṣṭādhyāyī*, in brief then, is a finite set of rules capable of deriving an infinite number of correct Sanskrit utterances. Pāṇini manipulates word derivation as a tool to derive sentences. His grammatical device is thus unique and any attempt to see in him things descriptive, transformational-generative, or anything else will definitely be an imposition.
Domain, Recurrence and Reference

Pāṇiniyas recognize two principles for interpreting rules in the Aṣṭādhyāyī: yathoddeśa and kāryakāla. The first emphasizes that a sutra should be understood fully at the place where it first appears in the grammar. The second emphasizes that a sutra should be understood fully at the place where it is operative. These principles have been explained with reference to rules which assign names (samjña) or offer interpretation (paribhaśā). For example, an adherent of the yathoddeśa view will understand the meaning and function of sutra 1.1.1 vṛddhir ādaic right at the beginning of the grammar. However, an adherent of the kāryakāla view will wait till the time this rule is brought close to the context of an operational rule which orders vṛddhi. One view thus focuses on the physical context of a rule while the other focuses on its functional context. The idea of domain and recurrence is related to the physical context of rules. Reference to antecedent is related to functional context.

Pāṇini presents his rules in sets or blocks in such a way that a larger set contains one or more smaller sets; the larger sets I shall term domains. The notion of domain is crucial to the Pāṇinian system of rule placement. It is obvious from the fact that more than three quarters of the entire grammar is covered by the following four domains:

(i) Controlling domain (CD), first book of the grammar which contains definitional and interpretational rules in general.
(ii) Obligatory domain (OD), rules, contained in the third through fifth books which must be scanned by every base-input.
(iii) Aṅga domain (AD), rules contained within the last quarter of book six and the entire seventh book.
(iv) Pada domain (PD), rules contained within the first three quarters of book eight.

The Aṣṭādhyāyī arranges its rules in eight books of four quarters each relative to topics and operations. The arrangement of rules in domains is no exception. However, the focus here shifts from topic and operation to proper interpretation of rules and the relations among them. This is especially true in view of the very condensed and algebraic style of rule-formulation. Rules within a domain are arranged such that a lower level rule expects the presence of a higher level rule or elements therefrom for its proper interpretation. Such rules or elements are said to recur and the device which makes such reference possible is known as recurrence (amṛtyati). The first rule of a domain is termed its heading rule (adhidhikārasūtra). Since
an adhikāra is generally defined as one which recurs, every rule that recurs becomes an adhikāra. This, however, is the technical interpretation. An adhikārasūtra in general is the heading rule of a domain or an interior domain. There may be rules in a given domain which do not belong to an interior domain. Such rules, when joined with the heading rules of their own respective domains, form the functional context (FC) of those domains. A string falls within the application of a domain or an interior domain if and only if it meets the requirements laid down by the FC. Consider the following controlled listing.

3.1.1 pratiyayah
3.1.2 paraś ca
3.1.3 ādyudāttās ca
3.1.4 anudāttau suppitaū

3.1.91 dhātoḥ
3.1.92 tatropapadaṃ saptamistham
3.1.93 kṛd atīn
3.1.94 vā’ sarūpo’ striyām

3.1.95 kṛtyāḥ prāṇaṃ nūlaḥ
3.1.132 cityāgni citye
3.2.84 bhūte
3.2.122 purī lūṇ cāsme
3.3.18 bhāve
3.3.112 ākroṣe nāny aṇih
4.1.1 nyāp-prātipadikāt
4.1.2 svaujasmauṭchaṣṭāḥbhyyāṃ...
4.1.3 striyām
4.1.76 taddhitāḥ
4.1.83 prāg divyato’ n
5.4.1 prāg vahateṣ thak

The above listing clearly shows that rules 3.1.2 through 3.1.4 are not included in any one of the interior domains. These rules together with 3.1.1 form the FC of this domain of affixes. Two interior domains headed by 3.1.91 dhātoḥ and 4.1.1 nyāp-prātipadikāt have been shown here with some of their interior domains. Note also that rules 3.1.92, 93 and 94 form the FC of the interior domain of 3.1.91.

By rule 1.3.11 svanitenādhihiṇaḥ, Pāṇini tells us that an adhikāra is one which is marked by the svanīta ‘circumflex’ accent. The function of an adhikāra is to contribute itself or its parts to the proper interpretation of the rules governed by it. This contribution is made possible by the process of recurrence. In short, an adhikāra carries itself or its parts. Since an adhikāra generally is defined as one which recurs in subsequent rules, every rule that recurs becomes an adhikāra. Based upon whether the adhikāra recurs in full or in part (ekadesa), anuvrtti will be total or partial. An adhikāra
carried in full normally will head a domain or an interior domain, as shown by rules 3.1.1. pratyayah, 3.1.91 dhātoḥ, 4.1.1 iyāp-prātipadikāt, 4.1.3 striyām, 4.1.76 taddhitāḥ, 6.4.1 angasya, 6.4.129 bhāsyā and 8.1.16 padasya. An adhikāra carried in part normally belongs to a non-heading rule. This necessitates maintaining a distinction between a heading rule (adhikāra) which is carried in full and a rule which is carried only in part (ekadesa).

Patañjali mentions three types of adhikāras: one, like a lamp, though set in one place, illuminates the entire room; another, by means of a ca, is carried to subsequent rules; and a third carries to each and every rule governed by it.¹ This three-way distinction implies that certain adhikāras literally are carried via anuvṛtti or by means of ca while others are treated only as though carried. The adhikāras which carry to each and every rule via anuvṛtti are heading rules, though not paribhāṣās. The adhikāras which sit in one place but are treated as understood may or may not be heading rules; however, they mostly are paribhāṣās as the following rules exemplify.

1.4.1 ā kaśāryād ekā samjñā
dhātoḥ
2.1.1 samarthah pradavidhiḥ
3.1.3 ādyutāttaś ca
3.1.4 anudāttāv suppitau
4.1.82 samarthānāṁ prathamād vā
dhātoḥ
5.4.68 samāśāntāḥ
8.2.1 pūrvatrasiddham

Haradatta (PM ad Kāś 1.4.23 kārake) mentions six types of adhikāras: name (samjñā), qualifier (viśeṣaṇa), substituend (sthānin), base (prakṛti), condition (nimitta) and substitute (ādesa). The examples which he cites are: 3.1.1 pratyayah, 4.2.92 seṣe, 6.1.84 ekah pūrvaparayoh, 4.1.1 iyāp-prātipadikāt, 6.4.46 ārdhadhātuke and 8.3.35 (apadāntasya) mūrdhanyah. Four inflectional endings mark these adhikāras: prathāmā, pānicamī, ṣāṣṭhī and saptaṃ. Samjñā and ādesa are marked with nominative (prathāmā); viśeṣaṇa and nimitta with locative (saptamī); genitive (ṣāṣṭhī) generally marks the sthānin while prakṛti is marked by ablative (pānicamī). It should be remembered here that these remarks on adhikāras generally apply to heading rules.

Adhikāras function in many ways: they introduce a term (3.1.1 pratyayah), specify a domain (1.4.23 kārake), offer a locally valid interpretation, or define the context of an operation. For example, rules 1.4.56 prāg riśvarāṁ nipātāḥ, 1.4.83 karmapravacaniyāḥ, 2.1.5 avayibhāvah, 2.1.22 tap-puruṣah, 3.1.1 pratyayah, 3.1.95 kṛtyāḥ and 4.1.76 taddhitāḥ introduce terms. One other function of these heading rules will be brought out in

¹ Mbh. 1.362: adhikāro nāma trīprakārah. kaścid ekadesaścāh sarvaṁ sāstram abhijvalayati. yathā prātipaḥ suprajvalitaḥ sarvaṁ vēmabhijvalayati. āparo dhikāro yathā rajyasaḥ vā baddham kāśmaṁ anukṛtyate tadvad anukṛtyate cakāreṇa. āparo dhikāro pratyogam tasyānirdesārtha iti yogo yoga upatīṣṭhate.
our discussion of reference. I have already cited several paribhāṣās which constitute headings and other locally valid interpretations. The scope of a heading rule which defines the context of an operation can be viewed in different ways. Thus, a heading may define the right or left context of an operation; consider, for example, 3.1.91 dhātoḥ 4.1.1 nyāp-prātipadināḥ and 4.1.82 samarthanām... which specify bases after which certain affixes can be introduced. Similarly, 6.3.1 alug uttarapade and 2.4.35 ārđhadhātuke provide clear illustrations of an adhikāra rule defining the right context of an operation. Many headings specify the conditions of affix placement, state an operation or simply define the scope of a domain. Rules 2.4.35 ārđhadhātuke, 4.2.92 ṣeṣa, 6.1.72 samhitāyām, 3.2.123 varttamāne laṭ, 3.2.84 bhūte, 3.3.18 bhāve exemplify these functions.

It has been stated that an adhikāra is recognized by its svarita accent. But since the Aṣṭādhyāyī has been handed down to us orally it is difficult to ascertain where the svarita mark was intended. Equally difficult is the question of determining how far an adhikāra carries. Commentators explain that vyākhyāna ‘explanations of the learned’ is the best source for ascertaining where the svarita was intended. Additionally, since the beginning of an adhikāra may also mark the end of an earlier adhikāra, svarita can thus be reconstructed by comparing the two adhikāras since one heading ceases to recur at the sight of the other. It is only logical to conclude that the recurrence of an adhikāra will be suspended when another is introduced. However, one should rely most on the vyākhyāna since the extent of an adhikāra depends largely on the expectations (ākāṅkṣā) of subsequent rules. The context of a subsequent rule governed by an adhikāra thus becomes crucial. The extent of a larger domain or interior domain is much easier to recognize. The situations which require recourse to vyākhyāna obtain most often with reference to rules contained within a domain or interior domain.

Two signs serve as indicators for determining the extent of larger adhikāras.

1. Change of a book (adhyaśya) or a quarter (pāda)

The change of a book or a quarter normally signals the beginning of a new topic and thus, signals the beginning of a new adhikāra. For example, the following rules all are given at the beginning of a book or quarter:

1.2.1 gān kuṭaṭihyāṃ..., 1.4.1 ā kaḍārad ekā saṁjñā, 2.1.1 samarthah padavidhiḥ, 2.3.1 anabhīhite, 2.4.1 dvigur ekavacanam, 3.1.1 pratyayah, 3.2.1 karmayya an, 3.3.1 uṇḍayyo bahuḥam, 3.4.1 dhūtusambandhe pratyayāḥ, 4.1.1 nyāp-prātipadināḥ, 4.2.1 tena raktam vāgāt, 6.1.1 ekāco dve prathamasya, 6.3.1 alug uttarapade, 6.4.1 aṅgasya, 7.1.1 yuvor anākau, 7.2.1 sici vṛddhiḥ paras-manipadeṣu, 8.1.1 sarvasya dve, 8.2.1 pūrvatráśiddham, 8.4.1 rasābhyaḥ no naḥ samānapade. The enumeration of these rules attests that the change of a book or quarter does signal a new topic. However, this may not always
be easy to comprehend as such cases as 4.3.1 yuṣmadasmador anyatarasyām khan ca, 5.4.1 pādasatasya... and 6.2.1 bahuvrīhau prakṛtyā pūrvapadaṃ indicate. Careful study of the context of these rules, however, lets us comprehend the change of a book or topic. For instance, rule 5.3.119 nyādayas tadṛājāḥ is the last rule of the third quarter of the fifth book. It assigns the term tadṛājā to certain affixes. This being the domain of affixes, one naturally would see a change in the offing. Similarly, rule 1.4.1 ā kadārād ekā samjñā delimits the domain of ekasamjñā valid through rule 2.2.38 kadārāh karmadhāraye. One can safely assume that 2.3.1 anabhihitē would introduce ... a new topic. The problem of determining the beginning of a new book, quarter, or topic, can also be resolved on the basis of the recurrence of rules which head larger domains. Rules 4.1.76 taddhitāḥ and 6.4.1 añgasya are examples of this.

Since the Aṣṭādhyāyī has been handed down to us largely through oral tradition, reliance on a written text in determining the change of a book, quarter or topic, and subsequently the beginning of an adhikāra, may to some appear questionable. However, the present arrangement of rules in books and quarters follows a system connected to the change in topics, so my observations still remain valid.

(2) Use of ā ‘up to’ and prāk ‘prior to’

Pāṇini uses ā and prāk to explicitly indicate the extent of a domain. He uses ā to indicate inclusive extent while prāk indicates exclusive extent. Consider the following listings where I also indicate rules which have been referenced as constituting the limit.

1.4.1 ā kadārād ekā samjñā
1.4.56 prāg riśvarān nipātāḥ
1.4.97 adhi riśvare
2.1.3 prāk kadārāt samāsah
2.2.38 kadārāh karmadhāraye
3.2.134 ā kves tacchila...
3.2.177 bhṛajabhāsabhāṣa...
4.1.83 prāg dīvyato теля

... 4.4.1 prāg vahateṣ thak
... 4.4.2 tena dīvyati
... 4.4.75 prāgg hitād yat
... 4.4.76 tad vahati rathayugapraśaṅgam
5.1.1 prāk krītāc chaḥ

... 5.1.5 tasmai hitam
5.1.17 parikhāyā dhaṅ
5.1.18 prāg vateṣ thañ
5.1.37 tena krītam
5.1.115 tena tulyam kriyā ced vatiḥ

5.3.1 prāg dīśo vibhaktiḥ

5.3.27 dīkṣādebdhyah...

5.3.70 prāg ivāt kah

5.3.96 iṣe prātkṛtau

8.3.63 prāk sitād adhayāye’pi

8.3.70 parinivibhyah svasita...

The above listings show only two instances of ā as opposed to ten instances of prāk. Two instances of prāk form an interior domain within a domain marked with ā. The interlocking of domains marked with prāk gives the impression of overlapping. This is due mainly to the fact that the rule which references the excluding limit of an adhikāra is included within another adhikāra. That is, a heading marked with prāk is included within the range of a similar heading. Can this create any difficulty in interpreting the rules? Normally not, but there are instances where caution is advised. Consider rule 5.1.1 prāk kritāc chaḥ which one would normally consider valid prior to rule 5.1.37 tena kritam. However, the scope of this interior domain does not extend beyond 5.1.17 parikhyāḥ dhaṇ. This is because the extent of a prāk domain entails both formal as well as semantic specifications. That is, an item which specifies the extent of a domain (of prāk) may be construed as denoting either its form or its meaning. For example, rules 4.4.75 prāgg hitād yat and 5.1.1 prāk kritāc chaḥ use hita and krita to specify the limit of their domains. As indicated by the above listings, these domains extend up to 5.1.5 tasmāi hitam and 5.1.37 tena kritam respectively. But this is not correct. The two words, hita and krita, here indicate the extent of their domains by means of their denotata. That is, the domain of 4.4.75 prāgg hitād yat extends up to the rule which introduces an affix denoting the sense of hita. The same is applicable to the domain of 5.1.1 prāk kritāc chaḥ. As a result, 4.4.75 is valid prior to 4.4.144 bhāve ca. Rule 5.1.1 is valid prior to 5.1.18 prāg vates thaṅ.

It is clear from above that the extent of larger domains is easier to determine. This should not give one the impression that determining the extent of larger domains is free of problems. Consider rule 6.4.1. anāgasya. It is generally accepted that 6.4.1 governs rules enumerated through book seven. However, the Mahābhāṣya (IV: 661-65) also examines another view which holds that 6.4.1 should not be considered valid beyond rules dealing with abhyāsavikāra 'modifications relative to reduplication'.

Consider 7.4.82 guṇo yaṁlukoh which orders guṇa (1.1.2 adeśa guṇah) under the condition of a following yaN, or its deletion by LUK. Thus, we get guṇa in bobhati and bobhaviṭī. The use of the word LUK in 7.4.82 and the fact that guṇa is applicable even when yaN is deleted by LUK are basic points in determining the extent of 6.4.1 prior to rules dealing with abhyāsavikāra.
If the word *LUK* is not included in the wording of rule 7.4.82, *guna* cannot take place in *bobhoti* and *bobhaviti*. The reason is simple: rule 1.1.63 *na lumatângasya* would not permit it.

Rule 1.1.63 can accomplish this blocking only if 7.4.82 is included within the domain of 6.4.1. Accordingly, rule 6.4.1 must cover rules enumerated through the end of book seven. If 6.4.1 is not treated as valid through rule 7.4.82, 1.1.63 cannot block *guna* and 7.4.82 would not need the explicit mention of the word *LUK*. For, in that case, *guna* will be accomplished on the basis of 1.1.62 *pratyâyalope pratyâyâlakṣaṇam*. Should we then accept that 6.4.1 does not cover rules dealing with *abhyâsavikāra*? No, that would create other problems. For example, in deriving *vaśraśca*, a *LIT* derivative of *vraśc* ‘to cut’, from *vraśc* + *vraśc* + *a*, 7.4.60 *halâdi śeṣah* reduces the first *vraśc* to *va*. The result is *vaśraśca*. However, 6.1.17 *līti abhyâsasyobhâyesām* may apply prior to reduplication. As a result, *samprasārâna* (1.1.45 *ig yaṇah samprasārânam*) will take place and a wrong form *vaśraśca* will result. Such problems do not arise if the domain of 6.4.1 is considered valid through the end of book seven. I do not wish to burden the reader with other details considering this issue. Suffice it to say that determining the extent of domains requires *vyâkhyâna*.

The interpretation (*vyâkhyâna*) of commentators is generally regarded as decisive in matters of conflicts concerning *adhihâras*. The smaller *adhihâras* in general and those forming part of a rule in particular are often tricky. Aside from *vyâkhyâna*, one can resort to the *anuvṛtti* process itself. *Anuvṛtti* elements are read with subsequent rules as part of their subject (*uddeśya*) or predicate (*vidheya*). A completed sentence with fully expanded *uddeśya* and *vidheya* thus becomes the interpretation of the *sūtra* in question.

Several indicators make it easy to ascertain what is carried. An *anuvṛtti* element can be carried either as part of the subject or predicate of a subsequent rule. Both sentential units have their own structure and content. Any element that carries must be syntactically and semantically compatible with the structure of subsequent rules. Thus, an incompatible *adhihâra* is suspect. Some incompatibilities, though, are hard to avoid. For example, there are many instances in the *Aṣṭādhyāyī* where the inflectional ending of a recurring element does not make any sense in subsequent rules. This does not, however, form the basis for rejecting an element as an *adhihâra*. Instead, the ending is changed to suit the needs of subsequent rules. There are also instances where an *adhihâra* which has long been terminated reappears. The recurrence of such an *adhihâra* has been compared with the leaping of a frog (*maṇḍûkapluti*). Such leaps must be accepted because, in their absence, a subsequent rule may not make any sense. This shows that an *adhihâra* carries without any interruption. Pāṇini makes explicit mention where he anticipates discontinuation of an *adhihâra*. Rule 3.1.94
vā' sarūpo' striyām is an example where a striyām denotes exception to the scope of this rule. At other places, the context accepts or rejects an adhikāra. For example, īnyāp of 4.1.1 īnyāp-prātipadāḥīt does not carry in rules contained within the domain of 4.1.3 striyām. The recurrence of īnyāp would not make any sense.

Certain adhikāras are accepted as recurring based upon relations among rules. For example, in a domain where an adhikāra carries from a general (utsarga) to a particular (viśeṣa) rule, recurrence of an adhikāra will be unacceptable because of blocking. Since a particular rule blocks the application of its general counterpart, a particular rule may not accept the anuvṛtti of an element from a general rule. In essence, such an adhikāra would be incompatible. There are many instances of this in the domain of 3.1.1 pratyayah where the recurrence of a general element is terminated by the appearance of its particular counterpart. The observation that one adhikāra ceases to recur at the sight of another is clearly tied to compatibility.

It is obvious from the preceding that anuvṛtti and adhikāra are connected. Anuvṛtti can be defined as a process whereby a former rule or its element is brought close to the context of a subsequent rule. It is an unidirectional process in the sense that a lower level rule expects the recurrence of a higher level rule or an element therefrom. It is also domain specific since Pāṇini presents his rules in domains and interior domains. The process of anuvṛtti also is explicit, since without it, proper interpretation of rules within a domain cannot be obtained. Given that anuvṛtti is localized within a domain and also is unidirectional, its instrumentality towards proper interpretation of rules falls more within the scope of a yathoddeśa view.

The device of reference is implicitly assumed as opposed to the explicit strategy of domain and recurrence in Pāṇini. In order to properly interpret and apply a given rule, one must refer to other rules. I call this device "reference to antecedent". Pāṇini uses two types of antecedents: definitional and operational. Definitional reference concerns names (samjña) and their denotata (samjñin), including metasymbols; operational reference involves groups of interpretable rules in an operational context. References made by using technical terms with fixed denotations are here called constants. References made by relative pronouns such as tad 'that' and yad 'what', on the other hand, are variables.

I shall demonstrate that definitional references and their individual indices are essential for derivation. A technical term or its denotation occurring in a subsequent rule of the grammar requires reference to its term origin, the place where the term was first introduced together with rules which first outlined its denotations. Thus, a technical term x, with its x₁ … xₙ occurrence in the grammar forms a chain of reference in such a way that each occurrence depends on x₁ for its interpretation or for the
recovery of its enumerated denotation. A preceding occurrence of this \( x \) depends on its immediately following occurrence for further steps in derivation. The last rule in this chain of reference always is the rule that triggers this device, while the first rule is always from the CD. This chain of reference can be termed complex if it includes one or more term origins.

Since the derivational mechanism is activated and controlled by definitions and operates on inputs by referring to elements, the exact nature of referential indices is important to bear in mind. This means keeping track of all the rules that explain and enumerate the terms and denotations or variables and their antecedents. I shall try to explain and illustrate these observations with examples.

In a sentence such as kumāraḥ pathati 'The boy reads,' we begin with two lexical items: kumāra 'boy' and path 'to read, recite'. The controlling domain identifies them as pratipadika 'nominal stem' and dhātu 'verb root' respectively. When used as input to the obligatory domain; kumāra accesses to an interior domain headed by 4.1.1 iyaḥ-pratipadikāt 'after that which ends in Ni, āp, or else, is a pratipadika'; path, however, accesses to the interior domain headed by 3.1.91 dhātoḥ 'after a verb root'. This access is justified because these governing rules contain the definitional terms pratipadika and dhātu which, in turn, identify the inputs.

At this stage, rule 4.1.2 svajasmau..., in case of kumāra, and rules 3.4.77-78 lasya-tipatsjhi..., in case of path, become applicable. A serious problem is encountered by these strings in the selection of elements enumerated here. Rule 4:1:2 lists twenty-one elements, and 3.4.78 lists eighteen. How and why should we choose one element from among all these? Is there any built-in device that can bring rules related to sUP and tIN placement closer to these rules? What would be the process of such a contextual recovery? No one doubts the existence and necessity of such a recovery. Patañjali has rightly remarked that "one does not reason that, since two rules occupy separate places in the grammar, they constitute separate contexts. There is one context of related rules, though standing in different places". In essence, operational rules cannot apply unless their interpretational or definitional rules are coupled with them. This can only be accomplished by the device of reference which is triggered by encountering a technical term or its denotation in an operational rule. This device reconstructs the term origin which, in turn, yields a referential index and it is this index that retrieves necessary information, explication or constraints relative to rule-application.

2 Subsequent discussion of LA and tIN will show that rules 3.4.77-78 cannot apply unless other rules are brought into focus or apply first; this necessarily means that 3.4.69 laḥ karmanī... applies prior to 3.4.77-78.

3 Mbh. (v. IV:392) on 3.4.67: na videṣastham ātī kṛtvato nānā vākyāṃ bhavati. videṣastham api sad ekavākyāṃ bhavati... The English translation here is from Cardona (1967:37).
Thus, a referential index of \textit{sUP}, \textit{LA} and \textit{tiN} must be reconstructed by computing the occurrences of these symbols in the higher domains. Let us first consider \textit{LA} and \textit{tiN}. \textit{LA} occurs in 3.4.77, 3.4.69 and 1.4.99 where we learn that \textit{LA} affixes are placed after transitive verbs when agents or objects are to be named.\footnote{‘Naming’ here refers to the invocation of inherent syntactico-semantic features of verb roots, in contrast to ‘expressing’ which means that a verbal form may or may not express agent, object, etc., through its post-verbal affixes even though its underlying root has already specified them (see also p. 53).} In case of intransitive verbs they are placed when agent or \textit{bhāva}\footnote{Pāṇini uses \textit{bhāva} with several meanings; for an insightful discussion of this diversity see Cardona (1970). I shall use the term in the sense of the central meaning of the verb root or action alone.} ‘root sense’ are to be named. Furthermore, replacements of \textit{LA} are termed \textit{parasmaipada} ‘active’. A separate reconstruction of \textit{tiN} leads us to rules 1.4.100-102 and 1.4.104. These rules classify \textit{tiN} elements in two sets of three triads each. Individual triads in a set represent third (\textit{prathamā}), second (\textit{madhyama}) and first (\textit{uttama}) persons respectively. Similarly, individual elements in a triad represent singular (\textit{ekavacana}), dual (\textit{divavacana}) and plural (\textit{bahuwacana}).

Since \textit{tiN} are replacements of \textit{LA}, the designation \textit{parasmaipada} is transferred to them by rule 1.4.99 \textit{lab parasmaipadām}. The immediately following rule, 1.4.100, identifies a second set of \textit{tiN} triads, i.e., \textit{taN}, as \textit{ātmanepada} ‘middle’. Thus we get the following indices:

1. \textit{LA}: \textit{tiN}: \textit{parasmaipada}
2. \textit{LA}: \textit{taN}: \textit{ātmanepada}

It is apparent that these referential indices are complex. We must reconstruct the term origin \textit{parasmaipada-ātmanepada} in its entirety. This requires reference to one more important set of rules, 1.3.12 through 1.3.78, where we learn that when \textit{bhāva} ‘root sense’ or \textit{karman} ‘object’ are to be expressed by the verb, \textit{ātmanepada} endings should be selected.\footnote{Rules contained in the set 1.3.12 through 1.3.78 discuss the \textit{ātmanepada-parasmaipada} placement with reference to various features of the verbal forms.} As opposed to this, the \textit{parasmaipada} set can be selected only when the agent has to be expressed. Thus, our referential indices outlined above have selectional constraints imposed upon them. That these agents, \textit{bhāva}, or object constraints are important will become clear when we explain their direct bearing on derivational choices.

Let us come back to the reconstruction of our term origin \textit{sUP}. This metasymbol also has been explained in the same set of rules, 1.4.100 through 1.4.104, which explained \textit{tiN}. These rules classify the \textit{sUP} elements in seven triads where each triad contains a singular, dual, and plural. These triads together form a subset of \textit{vibhakti} ‘nominal inflection’ along with \textit{tiN}. Furthermore, individual triads have been referenced as \textit{prathamā} ‘first’,
dvitiyā 'second', etc. Thus, terms like vibhakti and prathamā, etc., require one to bring the vibhakti section, i.e., the third quarter of the second book, close to the context of sūP selection. Since vibhaktis generally have been discussed with reference to kārakas, a reference to the kāraka section in the controlling domain is unavoidable. We must emphasize here that a selection from among the sūP affixes is practically impossible unless reference is made to the kāraka-vibhakti section of the grammar which, in turn, will require reference to the dependency relations between sūP and tiN selections.

Returning to our earlier remarks on derivational choices, we want to start with the constraints imposed on sūP and tiN selections. If the verbal root paṭh 'to read' opts for a selection in the parasmaipada set, the resultant form will express the agent through its parasmaipada endings. The result would be: paṭh + ŚaP + tiP → paṭhāti 'he reads'. This will leave kumāra, the named agent, to express only its prātipadikārtha 'nominal stem notion' since its function (kartrtrartha) has already been expressed by ti in paṭhāti. On the other hand, if paṭh opts for an ātmanepada set, kumāra will have to express the agent. The resultant string will be passive rather than active: kumārenā paṭhyate 'x is read by the boy'. Aside from offering interpretive insights and derivational options, referential indices also control derivational history. There are numerous such instances scattered throughout the grammar.

Let us consider some of the terms used in the domain of compound rules. We have samāsa (2.1.3), avayāvibhāvaḥ (2.1.5), tatpurṇaḥ (2.1.22), bahuvṛtiḥ (2.2.23), dvandvaḥ (2.2.29) and upasaraṇam (2.2.30). If a string enters this domain and starts scanning rules for possible application, it must also be provided with all the necessary information required for such application. Such information is not readily available here and as a consequence, it has to be retrieved from different sources. Part of the information will come from recurrence, but most of it must be retrieved through referential indices. It is worthwhile to discuss briefly the importance of the following reconstructed indices.

(a) samāsa 'compound'

1.2.45 arthavād adhātur apratyayāḥ prātipadikam
'a non-root non-affix meaningful unit is termed prātipadika 'nominal stem'

1.2.46 kṛt-taddhita-saṃsāsī ca
'a unit which ends in a kṛt or a taddhita affix or is a samāsa 'compound' is also termed prātipadika'

(b) avaya vibhāvaḥ 'indeclinable compound'

1.1.37 svarādi-nipātam avayam
'items cited as svarādi 'svar, etc.' and also those that bear the name nipāta 'particle', are termed avayā 'indeclinable'
1.1.41 avayayibhāva ca
‘avayayibhāva compounds are also termed avayayā’

(c) tatpurusa
1.2.42 tatpuruṣaḥ samānādhitkaraṇaḥ karmadhiṣṭayaḥ
‘a tatpuruṣa compound whose constituents stand in samāna-adhikaraṇa
‘syntactic coordination’ is termed karmadhiṣṭaya’

(d) upasarjana ‘secondary element’
1.2.43 prathamā-nirdiṣṭam samāsa upasarjanam
‘that constituent of a compound which is referenced with prathamā
‘first of the sU triads’ in rules that allow compound formation is termed
upasarjana’
1.2.44 ekavibhakti cāpūrva-nipātē
‘constituents which are consistently referenced with ekavibhakti ‘fixed
member’ of a sU triad’ and are not cited in rules dealing with pūrva-
nipāta ‘initial placement’ are also termed upasarjana’

In accordance with rule 2.1.4 read with the sU of 2.1.2, a compound is the
result of integrating two nominal padas ‘fully inflected words’. The result of
this integration, the compound, is termed prātipadika ‘nominal stem’ by rules
1.2.45-46. Thus, the term samāsa ‘compound’ in (a) brings the designation
prātipadika to all compounds. Similarly, if there are two syntactically related
words and one of them has been referenced with the first of the sU triads,
i.e. sU, au, jas, in a rule that allows compound formation, the said word is an
upasarjana. Rule 2.2.30 requires that upasarjana elements be placed first in a
compound. Application of 2.2.30 is practically impossible unless one knows
what upasarjana means. This information is provided by rules 1.2.43-44 and
hence must be retrieved from thereto permit application of 2.2.30. Retrieving
this kind of information is precisely the function of referential indices. I have
already stated that this process is triggered by encountering a term or its
denotations within a rule. What follows is the reconstruction of term origin in
tracing back the rules which first cited the term or explained, illustrated or
constrained it. A systematic computation of all such rules along with relevant
information contained in them characterizes a referential index.

As opposed to the general referential indices cited above, references listed
under (b), (c) and (d) are specific. The relevance of the term avayayā to
avayayibhāva compounds cannot be realized unless rules 1.1.37 and 1.1.41 are
brought closer to the context of 2.1.5. In the interior domain headed by 2.1.22,
we find one of the subtypes of tatpuruṣa referred to as dvigu. If a referential
index of the term tatpuruṣa is not reconstructed as soon as this term is
encountered, a second subtype of the tatpuruṣa compound, i.e., karmadhiṣṭaya,
can never be realized. It becomes increasingly clear that the domain of
compound formation is not limited to rules 2.1.1 through 2.2.38, but must be
expanded to include rules brought closer to its context by the process of
reference.
As noted earlier, references in terms of variables involve ād or tad and are used in specific operational contexts. The term 'operational context' means that variables are manipulated with reference to specific operations. Furthermore, these operations are permitted under certain constraints. For example, rules 4.1.82 and 4.1.92 concern an operation which allows sentential strings to alternate with their corresponding affixed units. This operation is constrained by 4.1.82 in the sense that the sentential strings must be composed of two syntactically related words. Further, the affix can only be postposed to the first word and the entire operation is optional. For the purpose of this operational context, the first syntactically related unit can be regarded as the generalized constant to which subsequent variables will refer.

To enable this reference, the variables are manipulated as though they filled a functional slot and are marked by specific case endings. Such references have been extensively used in the taddhīta and kṛt sections of the grammar. Let us consider the following references.

4.1.82 samarthānāṃ prathamād vā
‘after the first of two syntactically related paddas optionally’

4.1.92 tasyāpatyām
‘in the sense of the descendant of x...’

4.2.1 tena raktāṃ rāgāt
‘x (the colour) by which y has been coloured’

4.2.37 tasya samūhāḥ
‘in the sense of the group of x’

In the translation of the above sūtras x stands for the variables. The syntactically related pada inferred from 2.1.1 and referred to as samarthā ‘syntactically related’ in 4.1.82 is the constant generalized in such a way that all the xs in the above rules fill its functional slot. Since a syntactically related element is necessarily a pada and hence is destined to end in a case ending, the problem of ascertaining the case ending arises. If we manipulate the variables as though they represented those paddas or filled the functional slots of the generalized constants, then their case endings become explicit. Thus the variables in 4.1.92, 4.2.1 and 4.2.37, i.e. tasya marked with the genitive and tena marked with the instrumental, refer to those paddas that end in the sixth, third and sixth endings respectively.

In these instances, the case endings should be construed in accordance with the statements made in the kāraka-vibhakti section of the grammar. The sixth ending should be used (2.3.50) where one wants to express relationships other than those expressed by the accusative, etc., (dvitiyā; 2.3.2 karmanī...). The third should follow 1.4.42 sādhakatamam karaṇam whereby we learn that that which is most instrumental in accomplishing an action is the karana ‘instrument’. In our rule, tena stands in the third case ending represented by karaṇa and refers to that syntactically related
pada which is explicitly stated by 4.1.82. However, not just any syntactically related pada can and should be brought as referent in place of tena because of semantic specifications that follow tena, i.e. raktam 'coloured' and rāgat '... colour'. This results in construing the sense of the third ending in this context as the colour which is most instrumental in accomplishing the act of colouring. Thus, any word standing for colour should be put in the instrumental.

Our discussion has established the following facts about domain and reference.

(a) Pāṇini operates with an elaborate system of anuvṛtti whereby higher level rules within a domain are brought close to the context of lower level rules to facilitate the proper interpretation of the latter.

(b) Occurrences of technical terms in various rules perform the function of a triggering device which causes recourse to the process of reference. This process entails reconstructing the term origin which, in turn, yields a referential index.

(c) Such indices are vital to rule application and interpretation. Their importance is shown by the fact that the grammar cannot be manipulated without constant reference to technical terms and their denotata.
Scholars in the past have studied the structure of the *Aṣṭādhyāyī* from diverse orientations. Faddegon’s study (1936) largely neglected the function of the *Aṣṭādhyāyī*. Pawate (1935) concentrated on finding anomalies which could establish pre- or post-Pāṇinian elements of insertions. Buiskool (1939), rather brilliantly, studied the *Aṣṭādhyāyī*’s organizational structure, but only of one section, namely the *Tripādi “the last three quarters”*. More recently, Bhattacharya (1966), Bahulikar (1972) and Cardona (1976) have investigated the structure of the *Aṣṭādhyāyī*. Bhattacharya’s interest lay in justifying the order of various sections, or their contents, and in determining what, if any, elements in the text may be treated as pre-Pāṇinian. A similar concern occupied Bahulikar, who claimed that, based upon the analysis of the structure and the arrangement of the *śūtras*, one can discover layers of internal composition and arrangement. Bahulikar discerned a core of the *Aṣṭādhyāyī* which she attributed to Pāṇini, with subsequent layers superimposed by others. Cardona’s balanced and trustworthy treatment judiciously examines all the different views, especially those of Bhattacharya and Mīmāṃsaka.

I shall not concern myself here with what can and cannot be treated as un-Pāṇinian in Pāṇini’s *śūtras*. Except for a few variations of consequence, the *Aṣṭādhyāyī*’s text is well established. Even many of the non-Pāṇinian insertions are important for the correct interpretation of the text as it stands. After all, given the excellence of the *Aṣṭādhyāyī* as a grammar, it is certainly not a miracle brought about overnight. Pāṇini must have belonged to, and thus benefited from, a very rich grammatical tradition. This is certainly not to say that a study of insertions is not important. However, since most of the insertions are functionally well motivated, an investigation which centres on their origin rather than their function is less consequential. A study of the placement and context of rules can still teach a great deal provided it is pursued with proper orientation.

The discussion here of the structure of the *Aṣṭādhyāyī*, however, will concentrate on its organization and function. Surely, one of the reasons why Pāṇini arranged his rules in this particular order was to place them in domains and interior domains. An equally strong motivation, though, for this particular rule order is metatheoretical in nature. The grammar cannot accomplish its intent without clearly formulating both metatheory and conventions. Thus, the topical arrangement of rules in domains, also reflects the conceptual structure of the grammar. These dual motivations go hand in hand.
It is true that Pāṇini presents his rules in a serial order, but since they are classified in books and chapters according to topics, and also are organized under adhikāras, their functions cannot be discussed just on the basis of seriality or contiguity (paurvīparya). As I shall try to show, contiguity with reference to topics and adhikāras reveals the primary layer of organization where aumaṛṭi and interpretation of sūtras is in focus. Another layer superimposed on this straddles topic and domain boundaries. Furthermore, one can establish yet another layer of organization where rule interaction of broader consequence is in focus. I have discussed in chapter 4 the notion of domain and aumaṛṭi. The type of organization reflected by them is what I refer to here as the primary layer. Now consider the domain of ekasamjñā ‘one term’ where we also find the application of 1.4.2 vipraṭisedhe param kāryam. The organization reflected by rules of the ekasamjñā domain constitutes what I refer to here as the second layer. The third, and rather sophisticated aspect of organization, is reflected by, for example the division of the Āṣṭādhyāyī into sapādasaptādhyāyī ‘the first seven books and one quarter’ and tripādi ‘the (final) three quarters’. These layers of organization are based upon rule interaction where blocking of one rule by another is anticipated. I shall try to present the structure of the Āṣṭādhyāyī by discussing its content and organization as it relates to the notions of contiguity, rule interaction and blocking. This, I hope, will reveal the functional aspect of its structure.

The following is the summary of topics discussed in the Āṣṭādhyāyī.

**Book: I**
(a) major definitional and interpretational rules  
(b) rules dealing with extension (atideśa)  
(c) rules dealing with ātmanepada-parasmaipada...  
(d) rules dealing with the kārakas

**Book: II**
(a) rules dealing with compounds  
(b) rules dealing with nominal inflection  
(c) rules dealing with number and gender of compounds  
(d) rules dealing with replacements relative to roots  
(e) rules dealing with deletion by LUK

**Book: III**
(a) rules dealing with the derivation of roots ending in affixes saN, etc.  
(b) rules dealing with the derivation of items ending in a Kṛt  
(c) rules dealing with the derivation of items ending in a tiN

**Book: IV**
(a) rules dealing with the derivation of a pada ending in a sUP  
(b) rules dealing with feminine affixes  
(c) rules dealing with the derivation of nominal stems eding in an affix termed tattāhita
Books: VI-VII
(a) rules dealing with doubling
(b) rules dealing with samprastāraṇa
(c) rules dealing with samhīta
(d) rules dealing with the augment (āgama) sUṬ
(e) rules dealing with accents
(f) rules dealing with phonological operations relative to a presuffixal base (aṅga)
(g) rules dealing with operations relative to affixes, augments, etc.

Book: VIII
(a) rules dealing with doubling (dvitva) relative to a pada
(b) rules dealing with accent relative to a pada
(c) rules dealing with other phonological operations relative to a pada
(d) rules dealing with miscellaneous operations relative to a non-pada

The first book discusses basic terms, conventions and grammatical constructs. This does not mean that Pāṇini discusses terms and conventions only here, but that later discussion is minimal and with special purpose in mind. For example, he introduces the terms sārvadhātuka (3.4.113 tiṇśit sārvadhātukam) and ārddhadhātuka (3.4.114 ārddhadhātukam...) in the domain of 3.1.91 dhātoḥ to facilitate, among other things, the introduction of elements such as ṢaP, etc. (3.1.68 karttari ṢaP). Since no derivation can be accomplished without recourse to book one, I have called this the controlling domain (CD). Pāṇini normally starts with terms, plugging in the interpretive rules afterwards. Though he thus mixes the terms and interpretative rules, the dominance of the terms is still clear. It is because of this dominance that the tradition labels book one as samjñādhiśkāra ‘domain of names’. There is a great deal of similarity between rules which define terms and those which enumerate conventions. It is often difficult to distinguish them. Definitional terms of book one are also arranged in view of whether or not samjñāsamāveṣa ‘class inclusion’ is intended. Anticipated conflicts and subsequent resolutions offered by rules 1.4.1 ā kadārād ekā samjñā and 1.4.2 vipratiṣedhe param hāryam are also included.

The Aṣṭādhyāyī may be divided into two basic organizational units: sapādasaaptādhyāyī ‘the first seven books and one quarter’ and tripādi ‘the last three quarters’. This twofold division is shown by 8.2.1 pūrvatrasidham which states that rules of the last three quarters (tripādi) are treated as suspended (asiddha) in view of rules of the first seven books and one quarter. The fact that the rules of sapādasaaptādhyāyī are blind to the affect of rule application in the tripādi amounts only to a lack of interaction among rules of the two units. It does not amount to saying that the output of the tripādi cannot be subjected to rule application in the sapādasaaptādhyāyī. This twofold division is dictated mostly by the derivational
strategy Pāṇini uses. The tripādi is also constrained within itself. Its subsequent rules are treated as suspended in view of its earlier rules.

If we treat book one as the CD, the hierarchy of domains within the sapādasaptādhyāyī has to encompass books two through seven and the first quarter of book eight. Books three through five form a single domain of affixes. Since the Pāṇinian derivational process is set up with reference to bases and affixes, and operations relative to them, the domain of affixes should naturally precede the domain constituted by books six through eight. Where does book two fit in this? A major portion of rules in book two deals with compounds. Since a compound is derived with reference to syntactico-semantic conditions relative to a pada and also since paddas are derived by means of introducing affixes after bases, a description of compounds should not precede the description of affixes. But where else could Pāṇini put book two? Certainly not after book eight, as that is generally treated as the terminal domain for inputs. Besides, compounds are normally considered as optional derivations. That is, a compound such as rājapuruṣah ‘king’s man’ alternates with rājṇah puṣuṣah. Since they both derive from the same underlying string: (rājan + ṇas + puṣuṣa + sU), the grammar must have a device to relate them at some intermediate point in derivation.

An argument may be made in favour of including the discussion of compounds in the domain of rule 4.1.1 nyāp-prātipadikā. After all, compounds are nominal stems as are taddhitas and as do many taddhita derivates, they involve the condition of sāmartya ‘fitness’. Also, Pāṇini has already included here the introduction of certain affixes relative to compounds. The inclusion of compounds in book four would have been logical, finally, in view of their accent which Pāṇini discusses in book six. Thus, the question: if Pāṇini could put the discussion of derived nominals, i.e., krt and taddhita, in books three through five, what stopped him from including the description of compounds there? After all, compounds are derived nominals too. Aside from some operational difficulties which I shall discuss in connection with compound derivation in chapter 11, there is one obvious difficulty with such an inclusion. Pāṇini discusses compounds within the domain of ekasamjñā ‘one name’. A discussion of compounds in books three through five would be inappropriate because samjñāsamāveśa ‘class inclusion’ is the norm here.

The domain of 1.4.1 serves as a link between books one and two. If one accepts a twofold division of the sapādasaptādhyāyī into samjñā and vidhi where samjñā is constituted by book one and vidhi by the rest, book two becomes a link between the two. Rules governed by 2.3.1 anabhīhiite can also serve as links between the first two books and the domain of affixation (3.1.1 pratyayāh). The domain of ekasamjñā enumerates the kārakas which may by lexically expressed by vibhaktis. The grammar introduces vibhaktis
by rule 4.1.2 svaujas... which cannot apply unless rules dealing with the kāraka terms and vibhaktī are brought closer to it. Similarly, rule 3.4.78, which introduces tiN affixes, cannot apply unless rules dealing with ātmanepada-parasmaipada etc., are brought closer to it from book one.

A twofold division of pratayavidhi (books three through five) and pratayottaravidhi (books six through eight) is again desirable within the section of vidhi. Furthermore, one can also see a distinction between the rules of book three on the one hand and four and five on the other. Book three introduces tiN (3.4.78 tiptasjhi...) and krt (3.1.93 kṛd atiN) affixes while four and five introduce affixes Ņī, etc., (4.1.3 strīyāṃ), sUP (4.1.2 svaujasmau...) and the taddhita (4.1.76 taddhitāḥ). Book three normally takes a verb root as an input while books four and five require a nominal stem. The output of book three could be a root (3.1.32 sanādyanāṭa...), a nominal stem (1.2.46 kṛt-taddhita-samāsāsa ca) or a pada ending in tiN (1.4.14 sup-tīnantaṃ padam). The output of books four and five is a pada ending in sUP (1.4.14), an item ending in a feminine affix, or a nominal stem (1.2.46).

Book three itself may be viewed as consisting of three sections: the first dealing with the derivation of roots, the second with the derivation of padas ending in tiN and the third with the derivation of items ending in affixes termed krt. It is generally believed that an exception (apavāda) blocks the application of its related general (utsarga) rule. However, within the domain of 3.1.91 dhātoḥ, though with an exception of rules headed by 3.3.94 strīyāṃ ktiṇ, a formally dissimilar (asarūpa) 'affix' blocks the introduction of its general counterpart only optionally (3.1.94 vā' sarūpo' strīyāṃ).

Rules 4.1.2 svaujas..., 4.1.3 strīyāṃ and 4.1.76 taddhitāḥ clearly identify three sections of books four and five. The first introduces affixes termed sUP, the second introduces feminine affixes and the third introduces the taddhitas. The second and the third sections overlap. The overlapping rules introduce the term ṭaddhita whereby derived items may be termed nominal stems (pratipadika).

The domain of 4.1.76 taddhitāḥ covers rules up to the end of book five. It is the second largest domain, after the domain of 3.1.1 pratayyahā within which it is included. A subdomain of 4.1.76, headed by 4.1.82 samarthanāṃ prathamād vā, governs rules prior to 5.3.1 prāg dīśo vibhaktīḥ. This subdomain allows the introduction of a taddhita affix after the first of a string of syntactically related padas. Rules contained within the subdomain of 5.3.1 deal with the introduction of affixes termed vibhaktī. They are introduced after kīṁ 'what', bahu 'many' and items termed sarvanāman (1.1.27 sarvādīnī, sarvanāmāṇī, 5.3.2 kīṃ sarvanāma...). Indeclinables are next in order as bases. Finally, a major subdomain is headed by 5.4.68 samāsāntāḥ which, as the rule suggests, introduces taddhita affixes after items termed samāsa 'compound'.

The Aṣṭādhyāyī of Pāṇini
The Structure of the Asūdhyāyī

The domain of pratayottaravidhi covers books six through eight where rules introduce phonological changes in the shape of bases (prakṛti), presuffixal bases (āṅga) and affixes (prataya), etc. Three subdivisions may be easily discerned based on changes relative to a base (6.1.1 ekāco deve prathamasya — 6.3.39 samprasārāṇasya), changes relative to a presuffixal base (6.4.1 āṅgasya — 7.4.97 tca ganāḥ) and changes relative to a pada (book eight).

The first section introduces operations such as doubling (dvītva 6.1.1 ekāco...), samprasārāṇa (6.1.13 śya...), ātva ‘replacement in ā’ (6.1.45 ādeca upadesė’ siti), etc., samhitā ‘junction’ (6.1.72 samhitāyām), accent (svara: 6.1.158 anudāttam padam ekavajam) of roots (6.1.162 dhātoḥ), taddhita (6.1.164 taddhitasya) and samāsa ‘compound’ (6.1.223 samāsasya). The entire second quarter of book six constitutes an exception to rule 6.1.223. The third quarter of book six starts with the section generally known as aluk ‘non-deletion by LUK’ (6.3.1 alug uttarapade). What follows, beginning with rule 6.3.25 ānāṇi rto dvandve and extending up to rule 6.3.139 samprasārāṇasya, is a series of modifications conditioned by a following pada (uttarapada).

The succeeding five quarters of rules (6.4.1-7.4.97) introduce operations specific to a presuffixal base (āṅga) before an affix. The first eighteen rules introduce the lengthening of an antya ‘final’ vowel or an upadhā ‘penultimate’ vowel (1.1.65 alo’ ntyāt pūrva upadhā) of an āṅga. Rule 6.4.22 asiddhavād atrābhāt is an interpretive rule which states that an operation introduced by rules 6.4.23 śnān nalopah — 6.4.127 avalna ... is treated as suspended (asiddha) with respect to an operation introduced by another rule of this section, providing both operations share the same condition (nimitta). Obviously, rules of this section enjoy special status. Rule 6.4.129 bhāṣya (1.4.18 yaci bham; 1.4.17 svādiṣṭ asarvanāmanasthāne) introduces operations specific to a presuffixal base termed bha.

Book seven continues with operations relative to an āṅga. Phonological operations given in books six and seven generally follow the order of dvītva ‘doubling’, vikāra ‘modification’, ādea ‘replacement’ and āgama ‘augment’ in reference to bases, presuffixal bases, affixes and their resultant strings. It is not just a coincidence that the domain of pratayottaravidhi begins with dvītva and terminates with operations relative to dvītva at the end of book seven.

This summary of the content and domain-hierarchy lacks details concerning at least four rules: 1.4.1 ā Kadārād ekā samjñā, 3.1.94 vā sarīpo’ striyam, 6.4.22 asiddhavād atrābhāt and 8.2.1 pūrvatāsiddham. These rules clearly mark off their own functional domains within the Asūdhyāyī; domains which also touch upon some basic principles of structure and organization. For example, the domain of ekasamjñā cannot allow the assignment of more than one term (samjñā) to a single nominatum (samjñīn). This constraint is applicable to rules contained within the last
quarter of book one and first two quarters of book two. Elsewhere in the Āstādhyaṭi more than one term may be assigned to a single nominatum. But, the rules of the three quarters of ekasamjñā are thus arranged to disallow samjñāsamaśvesa ‘class inclusion’. Conflicts in the assignment of terms within the domain of ekasamjñā are resolvable by invoking rule 1.4.2 vīpratisedhe param kāryam. Recall that the principle of paratva ‘subsequent in order’ requires a particular kind of conflict which commentators recognize as tulyabalatā ‘equal strength’. That is, conflicts involving terms of the domain of ekasamjñā may be resolved on the basis of paratva if and only if rules which introduce the terms in question enjoy equal strength of application. Conflicts in the assignment of terms both within and without the domain of ekasamjñā may also be resolved on the basis of something other than paratva. I discussed in chapter 3 how niravakāśatva ‘no scope of application’ resolves conflicts without taking recourse to paratva. Additional inferences may also be drawn; namely, that conflicts among rules may be of other types than tulyabalatā and conflicts may also be resolved on the basis of something other than paratva.

Mention has been made of how Pāṇini formulates rules based upon generalizations abstracted from usage (see chapter 3). A general rule creates a larger domain from within which a related exception extracts its own domain. Pāṇiniyas recognize that an exception blocks its general counterpart obligatorily. However, consider rule 3.1.94 vā sarūpo striyām which provides for a formally dissimilar affix ruled as an exception in the domain of 3.1.91 dhātoḥ to block its general counterpart only optionally. Rules contained within the subdomain headed by rule 3.3.93 striyām kīn are not constrained by this.

The word asarūpaḥ is used in 3.1.94 as a qualifier (viśeṣaṇa) for the affix ruled as an exception. It cannot be treated as an adhikāra since then it could not be carried by anuvṛtti to rules beyond the subdomain of 3.3.93. This obviously creates problems. For instance, two vṛttikas both given ad 3.3.108 rogākhyāyām nval bahalam facilitate the derivation of rakārah ‘the letter r’ and repaḥ. The first vṛttika (vartā kāraḥ) is a general (utsarga) to which the second (rād ipaḥ) is an exception. If 3.1.94 is treated as an adhikāra, rād ipaḥ will obligatorily block varnāti kāraḥ. Consequently, rakārah can never be derived. This, however, should not give one the impression that difficulties in connection with the provision of 3.1.94 do not arise beyond the subdomain of 3.3.93. Pāṇiniyas recognize three paribhāṣas to cope with this (see PS. paribhāṣa 68...).

Now consider the following rules.

3.1.96 tavyattavyānīyaraḥ
‘affixes tavya, tavyaT and aniyaR occur after verbal roots’.
3.1.97 aco yat
‘affix yaT occurs after a verbal root which ends in a vowel (aC)’.
3.2.1 *karmay an*

'Affix *aN* occurs after a verbal root which co-occurs with a *pada* denoting an object (*karmiya*).

3.2.3 *āto nupasarge kah*

'Affix *Ka* occurs after a verbal root which ends in ā, is used without any preverb and co-occurs with a *pada* denoting an object'.

3.3.94 *striyam ktin*

'Affix *KīN* occurs after a verbal root when the derivat signifies feminine and *bhāva* 'action' or a *kāraka* other than a *kartṛ* is expressed as a name'.

3.3.102 *a prayāyat*

'Affix *a* occurs after a verbal root ending in an affix when the derivat signifies feminine and *bhāva* or a *kāraka* other than a *kartṛ* is expressed as a name'.

Rules 3.2.1 and 3.2.3 introduce affixes *aN* and *Ka* respectively. These affixes are formally similar (*sarūpa*); hence, affix *Ka*, an exception, blocks its general counterpart *aN* obligatorily. The same is true for affix *a* (3.3.102) obligatorily blocking the placement of affix *KīN* (3.3.94). Note however, that the reasons differ. Affix *Ka* blocks *aN* obligatorily because it does not meet the condition of formal dissimilarity (*asārūprya*) of 3.1.94 *striyam ktin*. Rules 3.3.94 and 3.3.102 introduce affixes *KīN* and *a* respectively where the first is a general rule and the second its related exception. Affix *a*, however, blocks *KīN* obligatorily because rules which introduce them are not covered by 3.1.94 *vā* *sarūpa*. . . . Rule 3.1.96 is a general rule which introduces affixes *tavayaT*, *tavaya* and *ānīyaR* to which rule 3.1.97 *aco yat* is an exception. These rules, however, are covered by 3.1.94 and since affix *yaT* is formally dissimilar to *tavayaT*, *tavaya* and *ānīyaR*, rule 3.1.97 blocks 3.1.96 only optionally. As a result we get *jeyam* 'that which should be won' as an optional form to *jeyam* and *jeyanīyam*. It should be obvious now that rule 3.1.94 carves out a special section within the *sāpūdasaptādhyāyi*. This section is special because the norm that an exception obligatorily blocks its general counterpart is valid here only optionally.

Rule 6.4.22 *asiddhavat atrābhat* identifies yet another special section within the *sāpūdasaptādhyāyi*. It states that the results of an operation *x* is treated as suspended when operation *y* is to be performed providing *x* and *y* are operations specific to the domain of 6.4.22 and both share the same condition (*nimitta*). The purpose of suspending a rule is to allow an *utsarga* 'general' rule to apply. The word *utsarga*, based upon its etymological meaning, refers to a *sthānin* 'substituendum' (utrañjate *ādesena nivartaya iti utsargaḥ). *Utsarga* refers to that which is set aside by a substitute (*ādesa*). The reference obviously here is to *sthānin*. One can also argue that since a general (*utsarga*) rule is set aside by a particular (*viṣeṣa*) rule in a manner similar to that in which a substitute sets aside a substituendum, *utsarga* shares similarities (*sādharmya*) with *sthānin*. Thus,
6.4.22 is an adhikāra, though an extension (atidesa) by nature. Its anuvṛtti extends up to and includes rule 6.4.129 bhasya. Since the domain of 6.4.129 covers rules up to the end of this quarter, and since 6.4.22 carries through 6.4.129, the scope of 6.4.22 extends through the end of this quarter. Recalling that an exception blocks a general rule obligatorily with the exclusion of rules covered by rule 3.1.94 vā’ sarūpa... where such a blocking becomes optional, rule 6.4.22 provides for a general rule to apply under the provision of asiddhatva. Thus, the structuring and position of rules relative to generalizations and their related exceptions is functionally well motivated. Rule 6.4.22 characterizes this special aspect of interaction by extension as opposed to blocking.

Let us now consider the controlled derivation of edhi, second person singular imperative of as 'to be' and śādhi, second person singular imperative of sās.

(i) edhi

(a) as + si → 3.4.87 ser hy apic ca
   = as + (si → hi)
   = as + hi

(b) as + hi → 6.4.111 śnāssor allopah
   = (a → ə) s + hi

(c) s + hi → 6.4.119 ghvasor...
   = (s → e) + hi
   = e + hi

(d) e + hi → 6.4.101 hujhalyor...
   = e + (hi → dhi)
   = edhi

(ii) śādhi

(a) same as (a) of edhi

(b) sās + hi → 6.4.35 sā hau
   = (sās → sā) + hi
   = sā + hi

(c) sā + hi → 6.4.101 hujhalyor...
   = sā + (hi → dhi)
   = śādhi

The last rule applied in deriving both edhi and śādhi is 6.4.101 hujhalyor... This requires that a consonant initial (halādi) hi is replaced by dhi when occurring after an anīga constituted by hu 'to offer ritual oblation' or an āṅga ending in a sound denoted by jhL (Śś. 8-14). But rule 6.4.101 hujhalyor... cannot apply since neither e nor sā end in a jhL. Accordingly, hi cannot be replaced by dhi since it is not occurring after an āṅga ending in a jhL. Rule 6.4.22 asiddhavad... must be invoked here to suspend (asiddha) the results of the application of rules 6.4.119 ghvasor..., in edhi, and 6.4.35 sā hau,
in śādhi, in view of the application of rule 6.4.101 hujhalyor.... If the results of 6.4.119 and 6.4.35 are both treated as asiddha, input strings for the application of 6.4.101 will be ś + hi and śās + hi. The condition of hi following an āṅga ending in a jhL is thus fulfilled by restoring the sthānin, i.e., ś and śās. Obviously, the substitute (e or sā) must be set aside.

Now consider the following controlled derivations where wrong forms will result if 6.4.22 is not invoked.

(i) āgahi ‘second person singular Vedic imperative of āgam ‘to come’
    (a) āga + hi where m of āgam is deleted by 6.4.37 anudāttopadesa...
    (b) āga + hi where by 6.4.105 ato heh
        = *āga + (hi → Ø)
        = *āga

(ii) jahi
    (a) ja + hi where han is replaced by ja (6.4.36 hanter jah)
    (b) ja + hi where by 6.4.105 ato heh
        = *ja + (hi → Ø)
        = *ja

As indicated above, rule 6.4.105 ato heh will require the deletion of hi occurring after an āṅga ending in a. If an operation which is kṛta (here the deletion of m of āgam and the replacement of han by ja) is not treated as suspended (asiddha) in view of an operation which is kārya (here the deletion of hi), wrong forms will result. It is only after treating the results of 6.4.37 and 6.4.36 as suspended that we get āgam and han as input for the application of 6.4.105. Without suspending those rules, 6.4.105 is blocked from applying, since the input strings will not be able to meet the condition of having a final a.

The fact that Pāṇini indicates the limits of the domain of 6.4.22 in addition to stating the requirement of identical condition (samānanimittakatva) this latter is crucial in this connection. Given the derivation of rāgaḥ ‘colour, attachment’ from raṇj + GhaN where the n of raṇj has been deleted by 6.4.27 ghanī ca bhāvakaranāyoh, rule 7.2.116 ata upadhāyāḥ applies to introduce a vyādhi replacement for the penultimate a of an āṅga ending in a consonant. Since rule 7.2.116 falls outside the scope of 6.4.22, the results of the application (kṛta) of 6.4.27 cannot be treated as suspended in view of the application (kārya) of 7.2.116. Had this not been the case, the vyādhi of a could never have taken place. For, in that case, n, and not the a, would be penultimate.

Let us now consider an example of samānanimittakatva.

(i) papiṣaḥ
    (a) pa + pā + vas + Šas
where affix (K) vas (U) has been introduced after the verbal root pā which yields pa + pā + vas after dvītva ‘doubling’; also note that Šas is accusative plural
(b) \( \text{papā} + (\text{vas} \rightarrow \text{us}) + \text{Śas} \)
where rule 6.4.64 \( \text{āto lopa ṭiti ca} \) deletes the \( ā \) of the root

Remember that \text{sampṛsāraṇa} (kṛta) cannot be treated here as asiddha for
the deletion of \( ā \) (kārya) since these operations have different conditions. The
deletion of \( ā \) is conditioned by \text{vas} while the \text{sampṛsāraṇa} is conditioned by \( \text{Śas} \).

Let us now return to 8.2.1 \( \text{pūrvastrāddham} \) which marks off two sections
of the Aṣṭāduḥyāyi: the \text{sapūḍasaptāduḥyāyi} and the \text{tripādī}. The word \text{pūrvatra},
in view of its etymological meaning of \text{pūrvasmin}, refers in this context to
the \text{sapūḍasaptāduḥyāyi}. Since the word \text{pūrva} 'prior' is a relative term which
expects reference to \text{para} 'subsequent', we must decide 'prior to or sub-
sequent to what'. Rule 8.2.1 serves as its own avadhi 'extent, limit'. In other
words, \text{pūrva} and \text{para} here will mean respectively prior to or subsequent
to rule 8.2.1. One may thus interpret rule 8.2.1 as follows: rules contained
within the last three quarters of the Aṣṭāduḥyāyi are treated as suspended in
view of rules contained within the first seven books and one quarter. In
addition, subsequent (\text{para}) rules within the \text{tripādī} are treated as sus-
pended in view of prior (\text{pūrva}) rules.

Consider \text{amuśmai} which is derived by introducing \( \text{Ne} \) 'fourth triplet sin-
gular of SUP' after \text{adas}.

(a) \text{adas} + \( \text{Ne} \) by 7.2.102 \( \text{tyadādināmaḥ} \)
    \( = \text{ada} + (s \rightarrow a) + \text{Ne} \)
    \( = \text{ada} + a + \text{Ne} \)

(b) \text{ada} + \( a + \text{Ne} \) by 6.1.97 \( \text{ato guṇe} \)
    \( = \text{ad} (a + a \rightarrow a) + \text{Ne} \)
    \( = \text{ad} + a + \text{Ne} \)
    \( = \text{ada} + \text{Ne} \)

(c) \text{ada} + \( \text{Ne} \) by 8.2.80 \( \text{adaso' ser...} \)
    \( = a(d \rightarrow m) (a \rightarrow u) + \text{Ne} \)
    \( = a + m + u + \text{Ne} \)
    \( = \text{amu} + \text{Ne} \)

(d) \text{amu} + \( \text{Ne} \) by 7.1.14 \text{sarvanāṃnaḥ smai}
    \( = \text{amu} + (\text{Ne} \rightarrow \text{smai}) \)
    \( = \text{amu} + \text{smai} \)

(e) \text{amu} + \( \text{smai} \) by 8.3.59 \( \text{ādea ṣṛṭayāḥ} \)
    \( = \text{amu} + (s \rightarrow s) \text{ mai} \)
    \( = \text{amuśmai} \)

Rule 7.1.14 \text{sarvanāṃnaḥ smai} requires that \text{smai} be substituted for \( \text{Ne} \)
when \( \text{Ne} \) occurs after a pronoun (sarvanāma) ending in -a. However, the
input on which this rule applies does not end in a but in u. Here it is the
result of the application of rule 8.2.80 \( \text{adaso' ser...} \) which makes the string
end in u. The string was \( \text{ada} + \text{Ne} \) before 8.2.80 applied. By invoking
asiddhatva of 8.2.1, the string will be treated as if it were \( \text{ada} + \text{Ne} \). This,
in turn, will enable rule 7.1.14 to apply. If 8.2.80 is not treated as asiddha in view of the application of 7.1.14, amuśmaṁ can never be derived.

The interpretation that a subsequent rule of tripādi is treated as suspended in view of its prior rule arises because rule 8.2.1 is an adhikāra ‘governing rule’. Consider the derivation of godhuṁmān ‘one who is milking the cow’. Given the string goduh + matUP → goduh + mat, the h will be replaced by gh (8.2.32 dāder dhātor ghaḥ), which, in turn, will be replaced by g (8.2.39 jhalāṁ jaśo’ nte). This g will be further replaced by n (8.4.45 yaro’ nūnsāike ...). At the same time, rule 8.2.37 ekāco bāso ... will require the d of goduh to be replaced by dh. Rule 8.2.37 will block the application of 8.2.39 jhalāṁ jaśo nte as an exception (apavāda). It will block 8.4.45 yaro’ nūnsāike ... as being internally conditioned (antarāṅga): godhumat, godhuṁmat, godhughmat and godhuṁmat will be the order of derivational steps. If one does not accept rule 8.2.1 as an adhikāra valid through the rest of the tripādi, rule 8.2.10 jhayah will find its scope of application on godhugh + mat. The result will be: *godhugh + (m → v) at = godhugh + vat, an undesired form.

A further question about asiddhatva arises in connection with the paribhāsās 1.1.49 saśthi sthāne yogā, 1.1.66 tasminn iti nirdīśte pūrvasya and 1.1.67 tasmād ity uttarasya. These paribhāsās must be supplied for the correct interpretation of rules 8.2.23 samyogāntasya lopah, 8.2.26 jhalo jhalī and 8.2.27 hravāṅgat respectively. These rules cannot make any sense without bringing the interpretive rules close to them. Accepting the principle of asiddhatva will make that impossible. Patañjali declares that even though the tripādi is treated as suspended in view of the sapādasaptādhīyī, the paribhāsā will still be valid. This is possible because of the principle of kāryakālaṁ samjñāparibhāsam. That is, samjñā ‘name’ and paribhāṣa ‘interpretive rule’ become meaningful only when they are joined with the corresponding operational rules. Rules such as 1.1.49 saśthi sthāne yogā, in view of kāryakāla, will become vacuous without being joined with rules such as 8.2.23 samyogāntasya... This latter rule will be equally meaningless without rules such as 1.1.49. The principle of kāryakāla establishes ekavākyatā ‘single sentenceness’ between interpretive and operational rules. This way, one does not interpret their relationship solely in terms of paurvāparya ‘one after the other’.

Pāññīyas recognize the following paribhāṣa: pūrva paranityāntaraṅga-pavādaṁ uttarottara bāliyah. That is, a subsequent (para) rule is treated as more powerful than a prior rule, an obligatory (nitya) is more powerful than a subsequent rule, an internally conditioned (antarāṅga) rule is more powerful than a subsequent or obligatory rule, and an exception (apavāda) is treated as more powerful than a subsequent, obligatory, or internally conditioned rule.

How a prior rule is less powerful than a subsequent is the subject of 1.4.2 viprāṣedhe paraṁ kāryam. Let us consider now how an obligatory rule
blocks the application of a subsequent rule. Given the string $tud + LAT$ where $LAT$ is replaced by -$tip$, rule 7.3.86 $pugantalaghūpadhasya ca$ requires that the penultimate (upadā) short vowel $u$ of $tud$, an āṅga (1.4.13 $yasmāt pratyayaavidhi$...), be replaced by its āṇa counterpart. Hence, if rule 7.3.86 applies, a wrong form *$t̄od + a + ti$ will result. This result is blocked by the application of rule 3.1.77 $tudādibhyāh saḥ$ which introduces $Śa$. However, this application should be blocked by 1.1.5 $kṣiti ca$ which blocks āṇa or $vṛddhi$ conditioned by an affix marked with $N$. Though the affix which conditions āṇa by enabling $tud$ to be termed an āṅga is marked with $Ś$ and not $N$; actually, $Śa$ is a sārvadhātuka affix by rule 3.4.113 $tiṇṣit$ ... and by rule 1.2.4 $sārvadhātukam apit$ is treated as marked with $N$. Finally, although 7.3.86 is subsequent, it cannot apply before 3.1.77 as this latter is an obligatory rule. That is, āṇa or no āṇa, $Śa$ must obligatorily be introduced after $tud$ before $ti$.

Now let us consider an example of how an antaraṅga rule is more powerful than a subsequent rule. Rule 1.1.33 prathamacarama ... optionally assigns the term sarvanāman to prathama ‘first’, carama ‘last’, etc., when an operation relative to $fas$ is to be performed. In an example such as $ubhaye devamanusyāh ‘both gods and human beings’, $ubhaya$ is termed sarvanāman. In view of the optional nature of rule 1.1.33, the nominative plural of $ubhaya$ should have two forms: $ubhaye$ where $ubhaya$ is termed sarvanāman and *$ubhayāh$ where it is not. However, there is only one correct form: $ubhaye$. The sarvanāman designation of $ubhaya$ is assigned by 1.1.27 sarvā- dini sarvanāmāni, a prior rule. Rule 1.1.33, even though a subsequent rule, cannot block the application of 1.1.27 by being a subsequent rule, since 1.1.27 obligatorily assigns the term sarvanāman to $ubhaya$. This designation is internally conditioned in the sense that $ubhaya$ is listed in the group headed by sarva. Also, in view of 1.1.27, $ubhaya$ need not depend upon $fas$ for this designation. Thus, 1.1.27 weakens and blocks 1.1.33 because of internal conditioning.

That an exception (apavāda) is more powerful than a subsequent rule is shown by the derivation of dadhnā, the instrumental singular neuter of dadhi ‘yoghurt’ where both rules 1.1.55 anekālśīt sarvasya and 1.1.53 nīc ca may become applicable. Given the string $dadhi + Ṭā = dadhi + ā$, rule 7.1.75 asthidadhi... introduces $anaN$ as a replacement. Since $anaN$ is constituted by more than one sound segment ($aL$) and also since $anaN$ is marked with $N$, both 1.1.55 and 1.1.53 find their scope in deciding whether $anaN$ should replace dadhi in toto or simply the final $i$. Since 1.1.53 is an exception to 1.1.55, however, 1.1.53 blocks 1.1.55 and consequently, we get $dadhi (i → anaN) + Ṭā = dadhi + ana + ā$.

The derivation of grāmaṇīini in grāmiṇīini kule provides an example of how an internally conditioned rule blocks an obligatory rule. Given the string grāmaṇī + $Nī$, two rules become applicable. Rule 7.1.73 iko ‘ci vibhaktau
requires that nUM should be introduced as an augment to grāmaṇi. At the same time, rule 1.2.47 hrasvo napumṣake prātipadikasya requires that the final i of grāmaṇi be replaced by short i. Now, 7.1.73 is an obligatory rule because whether or not long i is replaced by short i, either now or later, nUM must be introduced. The shortening of the long vowel is internally conditioned in the sense that its cause is within grāmaṇi, the nominal stem, itself. Since an internally conditioned rule is more powerful than an obligatory rule, 1.2.47 applies first. Rule 7.1.73 will apply later to introduce nUM.

Finally, let us consider an illustration of how an internally conditioned application is blocked by an exception. Consider the following rules: 6.1.87 ād guṇah and 6.1.101 akah savarṇe dirghah. They are both sandhi rules. They both introduce a single replacement in place of a sequence of two vowels in close proximity (saṃhitā). Rule 6.1.87 introduces a single guṇa replacement for an a and any aC that follows it. Rule 6.1.101 introduces a single homogeneous long vowel as a replacement for any aK (a, i, u, r, ṭ) followed by its homogeneous vowel. Now consider an example: dāitya + ariḥ where the final a of dāitya ‘demon’ and the initial a of ariḥ ‘enemy’ are in close proximity. The locus, that is the substituendum (sthānī) and the cause (nimitta), of both guṇa and savarṇa-dirgha ‘single homogeneous long vowel replacement’ are the same here. The vowels with reference to which these two operations obtain are the same. Thus, both rules are applicable.

Rule 6.1.87 ād guṇah is a general rule to which 6.1.101, a subsequent rule, is an exception. However, 6.1.87 also becomes an internal (antarāṅga) rule as compared with 6.1.101. Commentators explain that a rule may become antaraṅga if the cause of its application is cited first. The cause of guṇa, a, is cited first, but so is the cause of savarṇa-dirgha, since they are the same. In this instance where antaraṅgatva based on pūrvopasthiti ‘first citation of the cause’ offers no resolution, the exception rule proves more powerful. That is, 6.1.87 is blocked by 6.1.101 and the result is dāity (a + a→ā) ṛih = dāityāriḥ ‘the enemy of the demons’.

Consider another example, ayaja indram, which is derived from the string ayaj + i + indram where a + i of ayaja + i and i + i of i + indram allow the application of both 6.1.87 and 6.1.101. Here, however, the cause of guṇa, a, is clearly first in citation as opposed to the i of i + indram. Consequently, the exception of 6.1.101 cannot block the antaraṅga rule 6.1.87. The result is: ayaj (a + i→e) + indram = ayaja indram. An antaraṅga is blocked by an exception rule except where pūrvopasthiti of the nimitta favours antaraṅga. The antaraṅga of 6.1.87 is blocked by 6.1.101; the ayaja indram example involves, at least in part, different loci.

It should be clear from above that the structure of the Aṣṭādhyāyī reflects a system which focuses on rule interaction. The fact that paurvāparya alone
should not constitute the basis of interpreting relations among rules is important. The serial ordering of domains serves certain special functions. For example, it may signal domains of possible rule application by means of scanning and term assignment. However, the real structure and organization is revealed through the network of rule interaction. It is the patterns of rule interaction within and beyond the domains that establish hierarchy among rules. The broad dichotomy of general (sāmānya) and particular (vīśeṣa) rules thus receives a finer articulation. Additional details of this structure are dealt with in chapter 10.
Types of Rules

Pāṇini's rules have been classified in different categories based on their nature, scope and application. The purpose of a rule, in general, is to account for the derivation of correct Sanskrit utterances. This, in turn, is accomplished by applying required rules to appropriate input, such that the last such application yields an output which is the target utterance. This may give one the impression that the rules of the grammar are largely operational; in a way this is true. However, in order for the operational rules to accomplish their intent, one needs other rules, complementary in nature, whose basic function is to assist, interpret, constrain, negate or further expand the scope of operational rules. Pāṇini employs one set of rules, which I shall call operational (vīḍhi), complemented by another set which I shall call interpretational. A rule which clearly states some specific operation (kārya) to be performed is operational. All other rules are interpretational.

Commentators identify the following types of rules which I have classified under the above-mentioned two categories.

(a) technical rules (saṃjñā): rules which assign a particular term to a given entity
(b) interpretive rules (paṇibhāṣā): rules which regulate proper interpretation of a given rule or its application
(c) operation rules (vīḍhi): rules which state a given operation to be performed on a given input
(d) restriction rules (niyama): rules which restrict the scope of a given rule
(e) negation rules (pratiseṣṭha): rules which counter an otherwise positive provision of a given rule
(f) extension rules (atideśa): rules which expand the scope of a given rule, usually by allowing the transfer of certain properties which were otherwise not available
(g) optional rules (vibhāṣā): rules which render the provisions of a given rule optional
(h) ad hoc rules (nipātana): rules which provide forms to be treated as derived even though derivational details are missing
(i) heading rules (adhisthāna): rules which introduce a domain of rules sharing a common topic, operation, input, physical arrangement, etc.

It should be remembered that operation rules form the core of the
grammar. Rule types (a) and (b) are primarily interpretational. They facilitate proper interpretation and application of operation rules. Types (d), (e) and (j) are directly related to operation rules in the sense that (d) and (e) restrict their scope while (j) expands it. A distinction between (d) and (e), according to some, is unnecessary. It is argued that a provision made by a nityama rule is not different in nature from that made by a pratiṣedha rule. Those who maintain a distinction between (d) and (e) claim that (d) makes a positive provision, though in a restrictive fashion, while provisions made by (e) are purely negative. In any case, (d), (e) and (j) are strictly satellite categories to (c). One may also add type (g) to (c) as another satellite category. Rule type (h) is a short cut to (c) and hence is directly related to it. Adhikāra rules are substantially different in nature, and often cut across the boundary lines between various categories.

It is interesting to note that samjña, paribhāṣā and atidesa rules themselves do not provide for any operation. The other types provide for an operation either obligatorily, restrictively, optionally, negatively or on an ad hoc basis. Furthermore, these provisional modes, with the exception of the last one, also may relate to samjña, paribhāṣā or atidesa rules. However, this relationship is different in nature from their relation to vidhi rules. These provisional modes relate to vidhi rules strictly in view of an operation whereas they relate to samjña, paribhāṣā and atidesa rules from the point of view of facilitating an operation. Thus, one may find restrictive, negative or optional types of rules both in the sphere of vidhi as well as samjña, paribhāṣā and atidesa.

A detailed description of the adhikāra rules is given in chapter 4. A more full treatment of the other rule types will follow shortly. However, it is important first to focus upon another system of rule classification which I shall call hierarchical.

Since Pāṇini formulated his rules based on his efforts to capture certain generalizations reflected in usage, he formulated some rules with a general (sāmānaya) scope of application: These rules are termed general (utsarga). He also formulated other rules, relative to utsarga rules, and these commonly are termed specific (viśeṣa). These rules define their scope within the scope of a general rule and often are treated as exceptions (apavāda) to that rule. Other types of specific rules in relation to a sāmānaya are negations (pratiṣedha) and options (vibhāṣā), etc. This clearly establishes a hierarchical relationship among rules. From the point of view of the various strategies employed in the application of rules, one may also find rule types such as nitya ‘obligatory’, para ‘subsequent’, antarāṅga ‘internally conditioned’ and bahiraṅga ‘externally conditioned’. This hierarchical relationship among rules is discussed in chapter 5.

(1) Operation Rules

It has been stated that operation (vidhi) rules provide for a certain operation to be performed. In this sense, the term vidhi refers to kārya
'operation, action'. However, since an operation obtains with reference to an operand (kāryān), and hence may also involve introduction of an element, vidhi is also used in the sense of the object of an operation. These two interpretations go hand in hand. Thus, there are certain elements which have to be introduced to form an input so that certain operations may take place. These operations, in turn, may introduce an element as object of an operation.

The derivational mechanism of the Aṣṭādhyāyī entails the following operations.

1.1 placement (pratyaya)
1.2 addition (āgama)
1.3 replacement (ādeśa)
1.4 modification (vikāra), and
1.5 deletion (lopa)

The above classification may not appear to be in perfect accord with traditional descriptions. What I call placement generally has been referred to as pratyayavidhi 'operation relative to an affix'. This term, however, has been used in a much wider sense. I shall use the term 'placement' to refer to the introduction of the first affix after a base (prakṛti). Pāṇini derives two types of forms: those that end in a tiN (3.4.78 tiptasjhi...), and those that end in a sUP (4.1.2 svaujas...). Both these forms are termed pada (1.4.14 suptiṇantam padam). A pada ending in a tiN underlies a base termed dhātu 'verbal root', whereas a pada ending in a sUP underlies a base termed prātipadika 'nominal stem'. Roots are twofold: primary roots listed in the Dhātupāṭha, and derived roots, terminating in affixes termed saN, etc. Nominal bases also are of two types: primary stems characterized by rule 1.2.45 arthavad..., and derived or complex stems which either terminate in a Kṛt (3.1.93 kṛd atiN) or a taddhita (4.1.76 taddhitāḥ) affix, or else are termed samāsa 'compound' (1.2.46 kṛtād-dhitasamāsas ca). In view of the preceding, placement should be understood as an operation which introduces an affix immediately after a base outlined as above.

1.1 Placement (pratyaya)

Affixes relative to placement operation are given in books three through five under the heading 3.1.1 pratyayah 'affix'. The following is the listing of major domains.

3.1.1 pratyayah
3.1.2 paraś ca
3.1.3 ādy-udāttaś ca
3.1.4 anudāttau suṣ-pitau
3.1.7 dhātoḥ...
3.1.32 sanādy-antā dhātavah
3.1.91 dhātoḥ

3.2.1 karmanya an

3.4.117 chandasya ubhayathā

4.1.1 nyāp-prātipadikāt

4.1.2 svaujas...

4.1.3 striyām

4.1.75 āvatyāc ca

4.1.76 taddhitaḥ

5.4.160 niṣpravāniś ca

Rule 3.1.2 requires that affixes be placed after bases which may be either a root or a nominal stem. Rule 3.1.91 dhātoḥ heads a domain which requires a verbal root (dhātu) as its input. Similarly, 4.1.1 nyāp... requires an input which either ends in a feminine affix (Nī or āP) or is a nominal stem. Since feminine affixes are always introduced after nominal stems, the domain of 4.1.3 striyām, which introduces feminine affixes, naturally forms an interior domain within the domain of 4.1.1. Furthermore, since the output of 4.1.3 obligatorily becomes an input to 4.1.1, the latter rule has nyāp in the heading to allow such access. The output of the 4.1.1-2 interior domain has to be a pada ending in a sUP. This pada, under the condition of a syntactico-semantic relation, may receive an affix, such as a taddhīta, to yield a prātipadika. This being the case, the output of 4.1.2 may again become an input to 4.1.2. Additionally, this output of the taddhīta domain first may opt for access to 4.1.3 striyām, and then, finally become an input to 4.1.1-2. In summation, 4.1.1 allows two sets of input: prātipadika and items ending in a feminine affix. These latter items are derived by introducing feminine affixes to prātipadikas. Since prātipadikas also include items ending in a kṛt, a taddhīta or an item termed samāṣa, the taddhīta and samāṣa sections also form input to 4.1.1-2. Furthermore, this input may opt for 4.1.3 first and then for 4.1.2. This makes the domain of 4.1.1-2 cyclic; its output may re-enter as input.

The output of 3.1.5 dhātoḥ... is termed a dhātu by 3.1.32. This again forms an input to 3.1.91 dhātoḥ. These domains, however, do not permit cyclic applications. There are two sets of affixes introduced after items termed dhātu ‘root’: tiN and kṛt. The first do not form part of the placement operation because they are treated as replacements for a set of ten abstract affixes commonly referred to as LA (3.4.77 lasya; 3.4.78 tiptas-jhi...). Affixes termed kṛt form part of the placement operation as they are introduced directly after the verb roots. This and my earlier observations concerning the placement of an affix in the domain of 4.1.1 characterize placement as an operation which only requires a left context constituted by a base. This, of course, is a formal condition.

The output which involves a replacement of LA in tiN is treated as a pada whereas the output which involves a kṛt is termed a prātipadika. As such,
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it is on par with other inputs of the domain of 4.1.1. It is interesting to note
that kṛt affixes underlie an input other than the input of 4.1.1, but yield an
output which is similar to the input of 4.1.1.

Our characterization of placement as an operation which requires a left
context demands some qualification. First of all, this left context is formal
and secondly, it is referenced with ablative (pañcamī). Thus the verbal and
nominal bases required under the domain of 3.1.91 dhātoḥ and 4.1.1
nyāp... are both referenced by ablative in the heading rules. A left context
constituted by a root can further be specified by the use or omission of a
preverb, its particular class membership in the DP and whether or not it
ends in a vowel or has a penultimate vowel. Furthermore, specification
can also be made with respect to particular meanings denoted by the bases.
For example, consider the following set of rules.

3.1.1 pratyayaḥ
3.1.2 paraś ca
3.1.91 dhātoḥ
3.1.92 tatraśpadam saptamiśtham
3.1.93 kṛd atiṁ
3.1.95 kṛtyāḥ
3.1.96 tavya-tavyāniyaraḥ
3.1.97 aco yat
3.1.98 por ad-upadhāḥ
3.1.99 saki-sahas ca
3.1.100 gada-mada-çara-yamaś canoe sarage

The above listing allows for the placement of kṛt (3.1.93) affixes (3.1.1)
termed kṛtya (3.1.95) after (3.1.2) verbal roots (3.1.91). Thus, dhātu ‘verb
root’ is the left context. Rule 3.1.96 introduces the affixes tavyaT, tavya and
aniyaram in general. Rules 3.1.97 and 3.1.98 are more specific. As a conseque
cence, 3.1.97 specifies the left context as a root which ends in a vowel and
allows the placement of affix yaT. Rule 3.1.98 requires that the root
constituting the left context terminate in a labial stop or nasal and have a
in its penultimate (upadhā) position. Similar specifications are offered by
3.1.99 and 3.1.100, both of which name roots constituting the left context
with the difference being that 3.1.100 does not allow the use of any
preverb with its roots.

Rule 3.1.92 tatraśpadam saptamiśtham adds another dimension to the
placement operation. It explains that that which is referenced by locative
(saptami) in this domain of dhātu (3.1.91) is termed upapada ‘co-occurring
pada’. Consider 3.2.1 karmay an where the left context is still a dhātu but
the placement of affix aN is constrained by the term karan ‘object’ in the
locative. The affix aN cannot be introduced after a root constituting the
left context unless there is an upapada which denotes karan. Thus,
kumbhakāra ‘pot maker’ is derived by introducing the affix aN after the
verbal root *Dhṛṣṇi* 'to do, make' under the conditions of *kumbha + Ñas*, a co-
occuring *pada* where Ñas (genitive singular) denotes *karman*. Needless to
say, the referent of *karman* is identified as an *upapada* because of its locative
as provided for by 3.1.93.

Similar observations can also be made about the placement operation
provided by the domain of 4.1.1 *nyāp-prātipadikāt*. Here, the left context is
constituted by a nominal stem (*prātipadika*). Since a nominal stem can also
constitute an item which is either a compound, or else ends in a *kṛt* or *tadd-
dhita* affix, nominal stems can be simple or complex. For purposes of
placement operations in the domain of 4.1.1, both types of nominals can opt
for access to the subdomains of 4.1.2, 4.1.3 and 4.1.76. For purposes
of the placement of *sUP* affixes by 4.1.2, I shall also consider the output of
the 4.1.3 subdomain to be a complex nominal. Thus, the left context for
4.1.2 can be constituted by a simple or complex nominal stem which also
includes items ending in feminine affixes introduced by the subdomain of
4.1.3. Similarly, the left context of 4.1.3 can be constituted by either a
simple or a complex nominal which excludes items ending in a feminine
affix.

The left context constituted by the placement operation outlined in the
subdomain of 4.1.76 *taddhitāh* is basically a simple nominal stem. How-
ever, it should be remembered that a *taddhita* derivative can re-enter the
*taddhita* domain for transformation into a complex *taddhita* derivative.
Furthermore, co-occurrence conditions somewhat similar to one discussed
in connection with 3.1.93 may also constrain the left context.

The left context for the placement operation outlined in the domain of
4.1.1 is to a large extent similar to the one given for the domain of 3.1.91.
The differences in specification of the left context of nominals are strictly
formal because of their being constituted by nominal stems and their
being both simple and complex. In summation, left contexts are intro-
duced by ablative. Their specification might entail enumerating them
either individually or as a group, or identifying them in terms of their
formal properties. Constraints can be imposed on them either by co-
occurrence conditions or their denotata or both.

Placement operations do not entail specification of the right context.
However, there are conditions under which a particular placement
affix may be introduced. These conditions are mostly formal, syntactic or
syntactico-semantic. Formal conditions generally concern the base
whereas syntactico-semantic conditions may concern the base, affix,
both or neither. Consider again 3.1.97 *aco yat* which introduces the
affix *yaT* after a verbal root terminating in *aC* 'a vowel'. This formal
condition which has been used to specify the left context also serves
as a condition for the introduction of *yaT*. The same interpretation is
applicable to 3.1.98.
Types of Rules

Placement affixes introduced in the domain of dhātu are of two types: tiN (3.4.78 tiptaśjī...) or kṛt (3.1.93 kṛd atiN). Since affixes enumerated by 3.4.78, i.e., tiN, are replacements of abstract suffixes termed LA, they do not come under placement LA affixes are introduced to denote agent (karta) or object (karmaṇa), in case of a transitive root and to denote agent or bhāva in case of an intransitive root (3.4.69 laḥ karmaṇa...). Thus, LA can denote either agent, object or action. Kṛt affixes are introduced to denote agent while a subset, termed kṛtya, denotes object and action. One may thus generalize that placement affixes introduced after verbal roots denote agent, object or action. It is understood that the signification of agent, object, or action can serve as a condition for placement affixes after verbs. One can interpret agent and object as syntactic or syntactico-semantic conditions, and bhāva as a semantic condition.

Other syntactico-semantic conditions may be found. For example, 3.2.123 vartamāne laṭ introduces affix LAṬ after a verb root when current time (vartamāna) is to be expressed. Thus pacaṭi ‘(he) cook’ is derived from pac + LA where LAṬ is a placement affix introduced after the verb root pac. LAṬ is a LA suffix; accordingly 3.4.69 laḥ karmaṇa... will apply. Hence, conditions for introduction of LAṬ will include: a left context constituted by a root (3.1.9 dhātuh), signification of agent or object (3.4.69 laḥ karmaṇa...) and current time (vartamāna). Similar meaning conditions can be found for introduction of other LA affixes.

Kṛt and kṛtya affixes, in addition to requiring the signification of agent, object or bhāva, may also require other conditions. These conditions may include, for example, signification of karana ‘instrument’ or other semantic conditions.

Conditions relevant to the introduction of placement affixes after a nominal base are similar in nature. Thus sUP (4.1.2 svaujas...) affixes can be introduced either to denote nominal stem notions (prātipadikārtha; 2.3.46) or other semantic notions such as part-whole, container-contained, possessor-possessed, (2.3.50 saṣṭhi seṣe), or to denote kāraka relations (2.3.2 karmaṇa dvitiyā, etc.). The domain of 4.1.3 striyām clearly is a domain requiring the signification of feminine. The domain of taddhita affixes (4.1.76 tāddhitaḥ) is highly diverse as far as their significations are concerned. For example, a taddhita affix can be introduced to denote ‘x’s offspring’ (4.1.92 tasyāpattyam), ‘born there’ (4.3.53 tatra bhavah), or ‘colored by the color x’ (4.2.1 tena raktan rāgāt).

(1.2) Addition (āgama)

Addition may be defined as an operation which requires both a right as well a left context. In general, the left context is the base and the right context is a placement affix. Additions are of two types, vikaraṇas and āgamas. The first type consists of those affixes which are added to a root under the
conditions of a following affix, generally a sārvadātuka (3.4.113 tiṃṣit sār-
vadātukam) or ārdhadātuka (3.4.114 ārdhadātukam sēṣāḥ) affix which has
replaced a LA suffix. For example, consider the derivation of pacatī
from pac + LAT where LAT is replaced by ti (3.4.77 lasya; 3.4.78 tiptaṣṣhi...).
Given the string pac + (LAT → ti) = pac + ti, ti is termed sārvadātuka by
3.4.113. Rule 3.1.68 kartari śap requires that ŠaP is to be introduced after
pac under the condition that a sārvadātuka affix denoting agent follows.
Thus, pac + ŠaP + ti = pac + a + ti = pacatī. Similar vikaraṇas are enumerated
for roots especially in view of their relationship in the classes of roots
in the DP. Rules 3.1.69 diuḍiḍhyāḥ śyen, 3.1.73 svāḍiḍhyāḥ śnuḥ, 3.1.77
tuṇḍiḍhyāḥ śaḥ 3.1.78 rudhādiḍhyāḥ śnam, 3.1.79 tanādi...uh and 3.1.81
kṛuṇḍiḍhyāḥ śnā, for example, introduce the vikaraṇas Śyaṇ, Śnu, Sa, Śnam,
u and Śnā after various classes of roots.

It has already been indicated that the right context for the introduction
of vikaraṇas generally is constituted by a sārvadātuka or an ārdhadātuka
affix. These affixes are replacements for LA affixes. It may follow from
this that vikaraṇas are introduced only after the LA affixes have been
replaced by tiN. This is largely correct, although there are certain other
vikaraṇas which may be introduced while a LA affix serves as right context.
Consider, for example, 3.1.33 syatāśi lṛṭuṭoh, 3.1.34 sīb bāhulaṃ lēṇi and
3.1.43 clī lūni whereby sya and tās, ŚIP and CLI are introduced as vikaraṇas
under condition of a right context formed by LRT, LUT, LET and LUN.
The CLI introduced by 3.1.43 is variously replaced by ŚIC or its exceptions
outlined by rules 3.1.44 cleḥ sic through 3.1.66 ciṃ bhāvavkarmoḥ.

Another set of addition items, as we indicated at the beginning of this
section, are termed āgamas. They differ from the vikaraṇas in that while
vikaraṇas are introduced in reference to a right context marked by ablative
(paṅcamī), āgamas are introduced with a right context marked by genitive
(saṭṭhi). Furthermore, vikaraṇas are termed an affix (pratyeya) and retain
their identity separately from the bases to which they are introduced. As
opposed to this, āgamas are not termed an affix and they become part of
the item to which they are introduced. Thus, they do not retain their separate
identity. Another interesting difference between the vikaraṇas and
āgamas is that while a vikaraṇa is always introduced to the right context
constituted by a base, an āgama may be introduced to a non-base. Consider
the derivation of pāṭhiṭā ‘he will read tomorrow’ in the following section
where iṬ, an āgama, is introduced to tās, a vikaraṇa.

Pāṇini marks the majority of his āgamas by Ṭ, K or M. Under the provi-
sions of rules 1.1.45 ādyantau ṭaṅkitau and 1.1.46 mūdaco’ nyāt parāh, an
āgama marked with Ṭ is introduced at the beginning, while one marked
with K is introduced at the end. Consider the derivation of pāṭhiṭā, bhīṣaye,
‘he frightens’ and muṅcatai ‘he releases’ where these examples are derived
from pāṭh + LUT, bhī + NIC + LAT and mūc + LAT. Given the string
path + tās + tiP where tās is a vikaraṇa introduced before LUT (3.1.332 syatās...), and LUT is replaced by tiP (3.4.77-78 lasya, tiptas...), tiP, in turn, is replaced by Ḍā (2.4.85 lutaḥ...) and is subsequently termed an ārdhadhātuka. The string becomes: path + tās + ṣ. Rule 7.2.35 ārdhadhātukasy... requires that tās receive an āgama iṬ. Since iṬ is marked with Ṭ it should be introduced at the beginning of tās to yield: path + iṬ + ṣ = path + i + tās + ṣ. Later, the ās of tās will be deleted by a vārttika on 6.4.143 ṣeḥ to yield pathitā.

The last two examples entail augments which are marked with K and M. Given the string bhī + NiC where NiC has been introduced after bhī by 3.1.26 hetumati ca, 7.3.40 bhīyo hetubhaye śuk requires that bhī should receive the augment sUK. Since this augment is marked with K, it is introduced at the end on bhī. Thus we get bhī + sUK + NiC =bhī + ś + i = bhīṣi, a root under the provisions of 3.1.32 sanadīy. ... This enables bhīṣi to receive LAT, which, after the application of several rules, yields bhīṣayate. The last example muṇcati is derived from muc + LAT where LAT is replaced by tiP and the vikaraṇa Ṣa is introduced by 3.1.77 tudādibhyaḥ ṣah. Given the string muc + Ṣa + tiP → muc + a + ti, 7.1.59 ṣe mucādinām introduces the augment nUM to muc. As nUM is marked with M, it should be introduced after the last vowel of muc. The result is: mu + nUM + c + a + ti → muṇcati.

(1.3) Replacement (ādesā)

Ādesā operations are diverse in nature, mostly because of the diversity of the sthānin 'item to be replaced' which they replace. The Mahābhāṣya (III:159) names vikaraṇas such as Śnam, Ṣa, etc., ādesās of ṢaP. I have already discussed abstract LA affixes and their eventual replacement by tiN. I have also explained how a vikaraṇa such as CL1 is replaced by SIC and its exceptions. In addition, one can also find replacements for either a part or the whole of a base. Thus, an ādesā may be ruled for a base, an affix or even a single sound segment.

The sthānin 'item to be replaced' generally is marked by the genitive and the ādesā by the nominative. The conditions for replacement are primarily right context and formal. Given the replacement formula XₐYₜZₗ, one may interpret X as a sthānin which should be replaced by Y under conditions Z. However, this interpretation raises a further question. Given 6.1.77 iko yaŋ aci, for example, whereby iK (i, u, r, l), the sthānin, is ordered replaced by yN (y, v, r, l), the ādesā, under the condition of a following aC (vowel), we must decide which, from among y, v, r, and l, is the proper replacement of i.

Such situations are resolved by 1.3.10 yathāsamkhya... This rule states that the assignment of equivalence should be made in the order of the elements enumerated. That is, when one finds an equal number of sthānin and replacements, assignment of equivalents is in the order in which the elements are listed. Rule 1.1.50 sthāne' ntaratamaḥ states that equivalency
may also be determined on the basis of maximum similarity between sthāna and ādesa. This similarity can be based on sthāna 'point of articulation', artha 'signification', guna 'sound quality' or pramāṇa 'duration'. All but artha refer to sounds and their attributes. Whenever there is conflict in assigning equivalency of sounds, similarity based on sthāna should be favoured.

For example, given the strings danda + agram and yūpa + agram, 6.1.101 akah savarne dirghaḥ will apply. This rule states that when sounds denoted by aK (a, i, u, r, l) are followed by vowels homogenous with them a single long vowel should replace both the preceding and the following. Thus, a + a of the above examples is replaced by ā, yielding danda'gram 'top or front of the stick' and yūpagram 'top or front of the ritual post'. The selection of long ā to replace a + a was made on the basis of their similarity in place of articulation (sthāna); they are both kaṇṭhya 'velar'.

For an example of similarity based on signification, consider the derivation of vātandyaayuvatiḥ 'young female descendant of Vataṇḍa' where the base is vātandyaayu, a karmadhāraya tatpurusa compound (1.2.42 tatpurusaḥ...) derived by combining vātandī + SU with yuvati + SU. After the compound formation, the endings are deleted. Rule 6.3.42 puvvat karmadhāraya... then applies to replace vātandī with its corresponding masculine form. However, that form does not denote apatya 'offspring' which vātandī does. As a result, one must select vātandya, a masculine form which also denotes apatya, as a replacement for vātandī.

Examples of similarity based on sound quality (guna) and duration (pramāṇa) are not difficult to find. Consider 7.3.52 cajoh ku ghinyatoh which, under certain conditions, causes the final c or j of a root to be replaced by kU (k, kh, g, gh, n; cf. 1.1.69 anudītii...). We clearly see that there are two substituenda for which five substitutes are ordered. In view of 1.1.50 sthāne..., we select k and g as proper replacements for c and j. We do this because of their similarity in sound quality. Thus, c is replaced by k because they share sound qualities such as aghosatva 'voicelessness' and alopaprayatva 'non-aspiration'. Similarly, j is replaced by g since they are both voiced non-aspirates.

For an example of similarity based on duration, consider the derivation of amuśmai 'dative singular of adas.' At one point of the derivation, the string is ada + smai. Rule 8.2.80 adaso ser... then orders two operations:

(a) replacement of d by m, and
(b) replacement of the final a of ada by u.

We know from 1.1.69 that items which do not constitute an affix but are denoted by aN or marked with U represent their own form as well as the forms of sounds homogenous with them. In view of this, u of 8.2.80 can be construed as either short (hrasva), long (dirgha) or extra-long (pluta). However, since the substituendum is short, we will replace it with a short u.
(1.4) Deletion (LOPA)

Deletion can be characterized as an operation where a non-zero sthānin is replaced by zero. It thus may be treated as a straightforward case of replacement. However, considering the plurality of terms by which Pāṇini accomplishes deletion and the complexity of the entire operation, it is better to treat deletion separately.

Pāṇini specifies the sthānin of a deletion by genitive. However, this should not be confused with his practice of locating a sthānin with reference to an item in the ablative (pañcamī; cf. 1.1.67 tasmād...) or locative (saptamī; cf. 1.1.66 tasmin...). Deletion in Pāṇini is a complex operation. This complexity is due primarily to (a) the diversity of the deleted elements, (b) the degree, part or whole, to which an element is deleted, (c) the term which accomplishes a given deletion, (d) the consequences, other than the non-appearance of part or whole of an element, of deletion, and (e) whether or not the deletion is recoverable.

In order to fully understand the process of deletion, the following set of rules must be considered.

1.1.60 adarśanam lopaḥ
1.1.61 pratayasya lūkṣiḥvupah
1.1.62 pratayalope pratayayalakṣaṇam
1.1.63 na lumatāṅgasya

Rule 1.1.60 is a general rule which defines LOPA as ‘non-appearance’. Within this general scope of deletion is included a specific domain characterized by the terms LUK, ŚLU and LUP and applies only to the deletion of an affix (pratayā; cf. 1.1.61). LOPA, LUK, ŚLU and LUP thus all mean deletion or ‘non-appearance of an element’. One may assume that L, their common element, represents non appearance. The O of LOPA may be contrasted with the U of LUK, ŚLU and LUP, thereby establishing the bhedakattva ‘distinctiveness’ of the two sets. The bhedakattva of individual deletions within the subdomain of affix deletions accomplished by LUK, ŚLU and LUP is maintained by K, P and Ś. Given the usual relationship between a general rule and corresponding specific rules, one would expect that LOPA excerpts its domain of application by leaving aside the domain of LUK, ŚLU and LUP. Rule 1.1.61 states that the domain of LUK, ŚLU and LUP is limited only to the deletion of an affix. Does this mean that deletion which involves zeroing of an element other than an affix is the domain of LOPA? The answer generally is yes. However, in order to correctly characterize the domain of LOPA, let us first focus on the scopes of LUK, ŚLU and LUP.

It is established that deletion by LUK, ŚLU and LUP obtains only when an affix is deleted. Affixes are listed in books three, four and five. In order to further delimit the individual domains of LUK, ŚLU and LUP, we must look for the specific deletion of affixes accomplished by the express
mention of one of these terms. Looking at the process of affixal deletion, one finds that ŚLU is employed only to delete an affix occurring after a verb of the juhityādi class (2.4.75 juhityādibhyāḥ śluḥ). These roots also require reduplication conditioned by ŚLU (6.1.10 ślau). LUP, on the other hand, strictly is limited to deleting certain taddhita (4.1.76 taddhitāḥ) affixes where the original number and gender of the base is retained (1.2.51 lupi yuktavat vyaktivacane).

In summation, affix deletion is the domain of LUK, ŚLU and LUP. The domain of LOPA generally is the deletion of non-affixes. Within affix deletion, ŚLU deletes affixes after verb roots belonging to a single specific class. LUP deletes only taddhita affixes which retain the original number and gender of the base. This clearly leaves a large domain for LUK which, when needed, will delete affixes after verb roots or nominal stems where ŚLU and LUP cannot be employed. All other deletions normally will be accomplished by LOPA.

Commentators explain that, on the strength of LUK in 7.3.73 lug vā duh..., deletion by LUK, ŚLU and LUP is total. That is, these terms cause the deletion of the entire affix. This would mean that partial deletion of an element must be accomplished by LOPA. What is the procedure when partial deletion of an affix is desired? Theoretically at least, that should also come under the domain of LOPA because LUK, etc., do not accomplish partial deletion. This possibility necessitates a re-examination of the term 'affix deletion' used in the context of LUK, ŚLU and LUP. When it comes to the domain of LUK, etc., affix deletion should be interpreted as total deletion.

It should be clear from the above discussion that LOPA and LUK are the most frequent means of deletion. LOPA may entail total or partial deletion of an affix, at least theoretically, base or any other element. LUK is employed to delete affixes other than those which specifically come under the domain of ŚLU and LUP.

In understanding the consequences and the recoverability of deletion the following rules are important.

1.1.62 pratyayalope pratyayalakṣaṇam
1.1.63 na lumatāṅgasya
1.2.49 luktaddhitaluki
1.2.51 lupi yuktavat vyaktivacane

Rule 1.1.61 specifies that operations conditioned by an affix obtain even when the affix is deleted. Rule 1.1.63 stipulates that such operations do not obtain with reference to an aṅga if the deletion is accomplished by LUK, ŚLU or LUP. Operations conditioned by an affix, and specific to an aṅga (1.4.13 yasmat..., do not obtain when that affix is deleted. Consider agnicti 'he who heaped the ritual fire' which derives from agnicti + SU where SU is a vibhakti termed affix. This SU is deleted by LOPA under the
provisions of 6.1.68 halñaífibhyo…. Rule 1.4.14 supiñantam padam then applies to assign the term pada to agnicit. But since 1.4.14 assigns the term pada only to an item which ends either in a SUP ‘nominal inflection’ or a tiN ‘verbal inflection’, and since agnicit does not end in SU, which has been deleted, assignment of the term pada cannot be accomplished. Rule 1.1.62 resolves this difficulty on the grounds that the deletion of SU is not accomplished by LUK etc., and agnicit is not undergoing an aṅga operation. Consequently, even though SU has been deleted, operation pada-assignment may obtain on agnicit.

Derivates like āgniya ‘I may strike’ present yet another aspect of affix deletion. This example is derived from ā + han + sīy + i where sīy is an āgama ‘augment’ termed affix. Rule 7.3.73 orders that s of sīy be deleted. This affix-deletion is partial and hence, operations characteristic of sīy would not obtain. The n of han would not be deleted.

In the preceding section we briefly discussed these consequences of deletion:

(a) LUK, ŚLU and LUP accomplish deletion of affixes only,
(b) deletion accomplished by LUK, ŚLU and LUP is total,
(c) LOPA may accomplish total or partial deletion of affixes as well as non-affixes,
(d) operations characteristic of an affix may obtain even when the affix is deleted, but not when the deletion is accomplished by LUK, ŚLU or LUP and the given operation relates to an aṅga, nor
(e) when LOPA deletes an affix partially.

This clearly indicates that the derivational history of a form attests to the recoverability of deletion.

Two more rules need to be discussed in connection with the consequences and recoverability of deletion: 1.2.49 luktaddhita… and 1.2.51 lupi….

The first rule states that when there is the deletion of a taddhita by LUK, the feminine affix contained in the base must also be deleted by LUK. Consider the derivation of viśākhaḥ ‘he who was born in the constellation viśākha’ from (viśākhā + ṅi + aN) + SU where viśākhā ends in the feminine affix (T)ā(P). Given the string viśākhā + aN where aN is deleted by LUK (cf. 4.3.34 śravīsthā …luk), ā, the feminine affix in viśākhā, also must be deleted. Rule 1.2.51 entails a semantic consequence in the sense that it allows the retention of the original number and gender of the base under the condition of affix deletion by LUP. Consider the derivation of pañcālāḥ ‘the country where the pañcāla warriors live’ where the underlying string is (pañcāla + ām + aN) + ās. Given the string pañcāla + aN, rule 4.2.81 janapade lūp deletes aN by LUP. The consequence of deletion is the retention of masculine plural in pañcālāḥ; when the country of the pañcāla warriors is meant, pañcāla must retain, or be declined in, masculine plural.
(2) Interpretational Rules

It has already been stated that rules which assist the interpretation and application of operational rules will be called interpretational. They basically are of two types: samjñā ‘technical rules’ and paribhāṣā ‘interpretive rules’.

(2.1) Technical rules (samjñā)

A rule which assigns a name to a linguistic element or its meaning is termed a samjñā. The term samjñā is derivable by introducing the affix aN after the verb root jñā used with the preverb sam. However, since aN may denote bhāva ‘action’, karman ‘object’ or karaṇa ‘instrument’, samjñā may be interpreted in three ways.

(a) samjñānāṁ samjñā (bhāva): the act of properly perceiving something,
(b) yaḥ samjñāyate (karman): that which is the object of proper perception, and
(c) samjñāyate anayā (karaṇa): that by means of which proper perception is made.

The purpose of a samjñā rule is to assign a term to a linguistic entity (object) or its meaning by means of which (karaṇa) proper perception (action) of those objects as well as their function may be attained. The object which is assigned a samjñā is called a samjñin. Pāṇini has used nearly one hundred technical terms which can be classified in view of their samjñin in three categories.

(a) those which assign a samjñā to a linguistic term,
(b) those which assign a samjñā to the meaning of a linguistic item, and
(c) those which assign a samjñā to the quality (guna) of a sound segment.

The above three categories are given the names sabdasya samjñā, arthasya samjñā and dharmasya samjñā. For example, consider the technical terms vṛddhi, prātipadika, dhātu, arga and pāda. These are names assigned to linguistic items, respectively a sound segment, nominal stem, root, presuffixal base and a fully derived word. This class of technical items is by far the largest. Technical terms assigned to the meaning of linguistic items are second in number. Thus, one finds samjñās like vibhāṣā, LOPA, LUK, ŚLU and LUP where vibhāṣā¹ is assigned to the meaning of na vā ‘or not’ and the other four terms are assigned to the meaning of adarśana ‘non-appearance’. Smallest in number are those samjñās assigned to sound quality. Thus, we find terms udātta, anudātta and svarīta, the high, low and circumflex pitch accents.

Pāṇini presents the majority of his technical terms in the first book. However, there are some which may be found elsewhere in the grammar. I shall call the samjñās enumerated in book one global as opposed to those

¹ Note that vibhāṣā may not even be accepted as a technical term as it does not relate to an operation in the same way the other terms do.
enumerated elsewhere which I shall call local. For example, technical terms assigned to compound types are given in book two where compounds are discussed. Technical terms given in the domain of affixes in books three, four and five relate to particular affixes. The placement of other local samjñās should be understood in a similar manner. While I am advancing the dichotomy of global and local samjñās, I am fully aware that there are many global samjñās which are similar in nature to local ones. Mere physical placement in the grammar should not be treated as the basis for this classification. Pāṇini has placed his global definitions in book one to facilitate operations throughout the grammar. Local definitions facilitate operations locally. Their most immediate function is to facilitate an operation within a given context (prakarana).

Consider, for example, the definitional term upapada ‘co-occurring pada’ which has been characterized locally by 3.1.92 tatropapadam saaptamis-tham. The rule simply states that ‘that which is specified in the locative in the domain of 3.1.91 dhātuh is termed an upapada’. This clearly justifies calling upapada a local definition. Similarly, abhyāśa (6.1.4 pūrvo bhīyāśah) ‘doubling’ finds its samjñin only locally. Many other definitional terms, especially in books three through five, are local; global definitions, however, may be employed throughout the grammar.

A question has been raised in consideration of the definitional terms karmadhāraya ‘a subcategory of tatpuruṣa compounds’ and upasarjana ‘secondary constituent of a compound’ which are defined by 1.2.42 tatpuruṣaḥ... and 1.2.43 prathamā nirdiṣṭa... Why didn’t Pāṇini define these terms locally in the second book with the other terms relative to samāsa ‘compound’? It should be noted here that the samāsa section comes under the domain of 1.4.1 ā kaṭārād ekā samjñā. If Pāṇini had put 1.2.43 in the samāsa section, a conflict would have arisen between the assignment of tatpuruṣa and karmadhāraya. Since karmadhāraya would have been subsequent, it would have blocked the tatpuruṣa assignment. Similarly, Bhattacharya thinks that for reasons unknown to us, Pāṇini did not include upasarjana in the samāsa section. I think that Pāṇini placed his definitions at appropriate places, above all, for operational reasons. I shall discuss this shortly.

One of the important purposes of formulating definitions is brevity (cf. laghvarthāṁ hi samjñā karanaṁ, Mbh. on 1.1.1). This intended brevity also is alluded to in statements such as āvantinyah samjñāḥ bhavanti ‘samjñās recur’ (Mbh.: 1.1.1). For an insightful discussion of an important aspect of brevity, see Cardona (1969: 20) and his discussion of the pratyāhāra iN.

Bhaṭṭoji Dīkṣita remarks (SK ad 1.1.72) that a samjñā recurs in various rules to make its samjñin known. That is, if the samjñā vrddhi occurs in a rule in the seventh book, rule 1.1.1 vrddhir ādaic should be brought in to explain that vrddhi means ā, ai and au. However, there is more to the
function of recurring technical terms; samjñās are highly instrumental in locating the domain of possible rule application (see chapter 4 for details). They are also instrumental in projecting what further steps a particular string may take in its derivation.

It was stated in connection with the classification of definitions into global and local categories that rule 1.4.1 ā kaṭārād ekā samjñā heads a domain where only one term may be assigned. This suggests yet another aspect of definitional terms. Since within its domain, 1.4.1 does not permit more than one term to be assigned to a given entity, one may infer that assignment of more than one term may be permissible elsewhere in the grammar. Paniniyas do believe that outside the domain of 1.4.1 (ekasamjñā), samjñāsamāveśa 'class inclusion' is the norm. This requires further explanation.

Rule 1.4.2 vipratīṣṭedhe paraṁ kāryam states that in matters of conflict between two rules of equal strength (vipratīṣṭedha) the rule which is subsequent in order applies. If there is a situation where a single element is equally qualified for the assignment of more than one term, 1.4.2 will be invoked. Now, Panini presents his kāraka terms in this domain in the order of āpadāna (1.4.24), sampradāna (1.4.32), karaṇa (1.4.42), adhikaraṇa (1.4.45), karanā (1.4.49) and karti (1.4.54). Consider the sentence

rāma dhanusā mṛgam vidhyati

'Rāma pierces the deer by [an arrow shot by] the bow' where 'bow' can qualify equally for assignment of the terms āpadāna or karaṇa. It can be termed an āpadāna because it serves as point of reference from whence occurs the movement away of the arrow (1.4.24 dhruvam apāye...). It can be termed karaṇa because unless there is a bow, the act of piercing the deer cannot be accomplished; 'bow' is the most instrumental means. This conflict is resolved by 1.4.2; 'bow' uniquely is termed karaṇa. This relative ordering of the kāraka terms suggesting their relative strength is more fully discussed in chapter 9.

It should be remembered here that unless there is clearly a conflict, 1.4.2 should not be invoked. Commentators also explain that 1.4.2 cannot be invoked where the conflict obtains between two rules whose relationship is one of general-exception (utsarga-apavāda), obligatory-nonobligatory (nitya-anitya), or internally conditioned-externally conditioned (antaraṅga-bahiraṅga; see Kāś. I:499) utsargāpavādanityāntaraṅgabahiraṅgeṣu tulyabalatā nāsti. The claim is that such sets of rules are lacking in equal strength (tulyabalatā).

There are situations in the ekasamjñā domain where samjñāsamāveśa is permitted. It has been done by express mention in order to delimit the scope of certain definitions with specific operational goals in mind. Consider, for example, rules 1.4.54 svatantrakartā and 1.4.55 tatprayojakhetuṣ ca whereby two terms karti and hetu both are assigned to the instigator
of kartṛ. Kāśīkā clearly states here that ca of 1.4.55 is used for purposes of class inclusion (samjñāsamāveśārthaḥ ca kāraḥ). Pāṇini does the same thing when he formulates 2.1.23 dviguṣ ca whereby he extends the tatpurusa designation to dvigu.

It has been stated that, outside the domain of 1.4.1, class inclusion is the norm. Consequently, one may find a particular linguistic element being assigned three names, such as pratyaya, kṛt and kṛtya (3.1.1 pratyayaḥ, 3.1.93 kṛt atiṇ, 3.1.94 kṛtyaḥ). Similarly, one may find an affix being assigned terms taddhita and tadrāja (4.1.171 te tadrājaḥ). However, just as samjñāsamāveśa may be permitted within the ekasamjñā domain, ekasamjñā may obtain within the domain of samjñāsamāveśa. That is, there may not be two terms assigned to an entity. It should be remembered that Pāṇini often resorts to explicit mention to resolve confusion. For example, a problem could arise with regard to the assignment of the terms gotra (4.1.162 aparāyaḥ...) and yuvan (4.1.163 jīvaṇti tu...). However, the word tu in 4.1.163 explicitly rules out samjñāsamāveśa.

Some further points must be discussed in connection with the description of the samjñās, namely their structure and source. It is natural that samjñā follows usage. However, since samjñās are assigned for purposes of grammar, grammatical usage can also serve as a source. Pāṇini takes many of his technical terms from the tradition. He may use them in the same sense, redefine them or leave them undefined. The samjñās which he takes from the outside world (loka) also may or may not be used in the same sense. In fact, we find several terms in Pāṇini which are used in both a popular as well as technical sense. An example is the term heter ‘cause, purpose’. It is to be remembered that technically any samjñā in Pāṇini should be treated as new irrespective of its denotatum outside the grammar, be it from the grammatical tradition or common usage. There are only two things shared by naming in the real world and naming in the grammar: one, that naming follows convention, whereby an existing entity x is assigned the name y, and the other, that y facilitates proper perception of x. Thus, a parent may name a bundle of flesh (x) devadatta (y) and thereafter devadatta (y) will be used to facilitate proper perception of x.

Pāṇini defines his terms by assigning the name y to x where x could be a single element, class of elements or a particular meaning of x. In doing this, he employs both the techniques of definition and enumeration. That is, he may formulate statements such as:

(a) let x be termed y, or
(b) let the following enumerated items be termed y.

Vṛddhi and guṇa, for example, follow (a) while sarvanāman and dhātu follow (b).

One normally expects that x, the nominatum, would precede y, the name, in a samjñā rule. Pāṇini usually follows this practice. However,
there are instances where he disrupts this arrangement. Patañjali defends Pāṇini’s use of the term (y) vṛddhi in the very first rule of the grammar on grounds of auspiciousness. However, in other instances of reverse order where Pāṇini uses the sanjñā first, such as 1.2.41 aprkta..., 3.1.92 tarpapadam..., 3.1.93 kṛd atin, 3.1.94 kṛtyāḥ and 3.4.114 ārdhadhātukam..., Patañjali is silent.

(2.2) Interpretive Rules (paribhāṣā)

Traditionally interpretive rules are known as paribhāṣā. The function of these rules is to provide a check on the operational rules so that they do not suffer from faults such as ativṛṣṭi ‘over application’, avṛṣṭi ‘under application’ and amabhava ‘impossible application’. That is, interpretive rules assist operational rules in precisely identifying their domain of application. Pāṇini has located about seventy-five such interpretive rules in different parts of the grammar, while the tradition recognizes more than 130 additional paribhāṣās. The totality of these paribhāṣās may be classified into three categories.

(a) vācāniki: explicitly stated by Pāṇini in the Aṣṭādhyāyi,

(b) jnāpakasiddha: those which Pāṇini must have implicitly assumed; the fact that all or part of a sūtra will become vacuous without accepting these indicates their importance, and

(c) nyāyasiddha: those which are axiomatic and owe their importance to the norms or standards of the outside world.

The last two categories of paribhāṣās have been created, explained and justified based on their indispensability for the correct interpretation of Pāṇini’s rules. Most of them date back to Vṛṣṇi, Kātyāyana and Patañjali. The Mahābhāṣya, with its vārttikas as well as paribhāṣās of Vṛṣṇi, is the most important source. Among the collections of paribhāṣās, Nāgāra’s Paribhāṣenduśekhara (PS) is by far the most important text. In this section, I shall consider primarily paribhāṣās of the Aṣṭādhyāyi (see chapter 8 for the paribhāṣās of PS).

Pāṇini has not used the word paribhāṣā in his grammar. Patañjali does not try to define precisely the characteristics of paribhāṣā. However, some of his statements accept their importance. He compares them to a lamp which, even though placed in one place, illuminates the entire room (see supra, fn. 1, p, 119). Thus, a paribhāṣā stands in one place but whenever needed joins in defining the exact scope of application of operational rules. The question still remains, however, how a paribhāṣā finds its scope. How does it find the operational rule that it illuminates? Kaiyata explains that a paribhāṣā is formulated with a built-in mark (liṅga) which in turn becomes its characteristic condition. In addition to this mark, a paribhāṣā also makes a provision for operation rules (Mbh. ad 2.1.1: liṅgopādānena paribhāṣā kriyamāṇaḥ yatra tal liṅgopālambhas tat tadṛṣṭāpnoti...).
Since *paribhāṣās* are strictly intended for the proper application of operational rules, I shall discuss the nature of a few of them with reference to specific operations. Consider rules 1.1.46 through 1.1.56.

1.1.46 ādyantau takitau
1.1.47 midaco' niyāt paraḥ
1.1.48 ec ig ḫrasvādeśe
1.1.49 saṣṭhi sthāne yogā
1.1.50 sthāne' ntaratamaḥ
1.1.51 uraṇ raparāḥ
1.1.52 alo' ntyasya
1.1.53 ni ca
1.1.54 ādeḥ parasya
1.1.55 anekāl-ṣīt sarvasya
1.1.56 sthānavad ādeśo' nalvīdha

Rule 1.1.49 makes a provision whereby a genitive ending which is not interpretable otherwise in a given context is to be interpreted as meaning ‘in place of’. This metarule facilitates identifying the *sthānīn* ‘substituendum’ which a given substitute may replace. Thus, genitive becomes the characteristic mark (*liṅga*) for this *paribhāṣā*. Consider 7.3.52 caioḥ ku... which, under certain conditions, orders *KU* (*k*, *kh*, *g*, *gh*, ni; 1.1.69 an-udīt...) as a substitute in place of *e* or *j*. We are faced with a problem here. There are five substitutes for two substituenda. Rule 1.1.50 resolves this by stating that a substitute must be most similar to the substituendum. As a result, we replace *e* by *k* and *j* by *g*. This maximum similarity is determined by their shared qualities (*guna*). Rule 1.1.51 provides that wherever *aN* (*a*, *i*, *u*) is ordered as a replacement for *r* it automatically must be followed by *r*. Consider kirati ‘he is scattering (things) around’, derived from *kr* + *LAṬ* → *kr* + *tip* → *kr* + *ŚaP* + *ti* = *kr* + *a* + *ti*. Rule 7.1.100 *rt id dhātōh* orders *i* as a replacement for the *r* of *kr*. Since the replacement *i* is denoted by *aN*, *i* must be followed by *r*. Thus we get *kr* (*r* → *ir*) + *a* + *ti* = kirati.

Rule 1.1.52 provides that a substitute ordered for a *sthānīn* in genitive should replace only its final sound segment (*aL*). However, 1.1.54 states that a substitute which consists of more than a single sound segment or which is marked with Ś should replace the entire *sthānīn*. Rule 1.1.53 is an exception to this. According to 1.1.53, a substitute which consists of more than one sound segment and is marked with *N* also replaces only the final sound segment of its *sthānīn*. Consider the derivation of the complex base *dvaimāturā* ‘he who has two mothers’ where *dvimātr* is a compound base formed from *dvi* + *os* + *mātr* + *os*. As usual, the genitive dual *os* will be deleted after compound formation yielding *dvaimātr* after which the affix *aN* will be introduced by 4.1.115 *mātur ut saṃkhya*. ... Note that in addition to introducing *aN*, this rule also requires a replacement in *u* for *mātr*. Needless to say, *mātr* is specified here in the genitive. Since *u*, the
substitute, does not consist of more than one sound segment, 1.1.52 will allow it to replace only the final \( r \) of \( māṭr \). Thus, \( dvimāṭr + a(N \rightarrow \emptyset) \rightarrow dvimāṭ(r \rightarrow ur) + a = dvimāṭur + a. Also note here that 1.1.51 uran raparāḥ will require \( u \), a replacement in \( aN \), to be followed automatically by \( r \). After the \( vrddhi \) replacement \( ai \) is introduced for the \( i \) of \( dvimāṭur + a \), we get dvaimāṭura.

The derivation of \( māṭāpitarau \) 'mother and father', a dvandva compound, proceeds from \( māṭr + sU + ṭṟ + sU = māṭṛpīṭr \) after which the nominative dual ending \( au \) is introduced. Given the string \( māṭṛpīṭ + au \), the anāga-final \( r \) will be replaced by \( guṇa \) followed automatically by \( r \): \( māṭṛpīṭ(r \rightarrow ar) + au = māṭṛpitar + au \). In the meantime, 6.3.25 \( ānāṁ \) ṛṭo dvandve... requires that \( r \) of \( māṭr \) be replaced by \( ānĀN \). This substitute consists of more than one sound segment but is marked with \( N \). Consequently it can replace only the final \( r \) of \( māṭr \). This will give us \( māṭ (r \rightarrow ānĀN) \) \( pūḷ \) = \( māṭāṃpīṭ(r \rightarrow ar) = māṭāṃpitar + au \). The \( n \) will be deleted later to yield māṭāpitarau.

It is clear from the preceding discussion that the above \( paribhāṣās \) are applicable to replacement operations. Our last rule, 1.1.56 \( sthāṇivad... \), also is a \( paribhāṣā \) dealing with replacement. However, its provision is different. The rule in itself is complex, I shall not discuss it in detail here. Suffice it to say that this rule provides, with some restriction, for treating a substitute (\( ādeśā \)) as if it were its \( sthāṇin \), so that operations characteristic of a given \( sthāṇin \) can still be performed even though it has been replaced.

Let us consider two other \( paribhāṣās \) with locative (\( saptamaṇi \)) and ablative (\( paṅcaṇi \)) as their marks.

1.1.66 \( tasminn iti nirdiṣṭe pūrvasya \)
' an item which is referred to by a locative ending is understood as the right context for operation on what precedes'

1.1.67 \( tasmād ity uttarasya \)
' an item which is referred to by an ablative ending is understood as the left context for operation on what follows'

Now consider the external sandhi between \( dadhi + atra \) which is allowed by 6.1.77 \( īko yaṇ aci \). The abbreviations \( iK \) and \( aC \) are in genitive and locative respectively. Clearly then, \( yN (y, v, r, l) \) is being introduced as a substitute in place of \( iK \). This replacement, however, is applicable only when \( iK \) is followed by \( aC \) because of 1.1.66. Thus \( aC \) serves as the right context for \( yN \) replacement. For details of how \( y \) is selected as a replacement for \( i \) to yield \( dadhyatra \) 'there is yoghurt here', see the discussion of \( ādeśā \) in section 1.3 of this chapter.

One may ask here, given an example of external sandhi in \( sudhī + uṭpāsyah = sudhyupāsyah \) 'respected by the learned', why isn't the \( u \) of \( su \) replaced by \( v \) before the \( i \) of \( dhī \) under the provisions of 6.1.77? After all, 1.1.66 only defines the right context, and 6.1.77 does not state explicitly
that $aC$ should follow $iK$ immediately. Moreover the locative in 1.1.66 
tasminn... is aupaśleśika denoting ‘proximity’ which need not mean 
contiguity. However, when we focus on nirdiṣṭe, another constituent of 1.1.66 
in the locative, we get the correct interpretation. The root $dī$ is used in the 
sense of pronunciation and hence nirdiṣṭe means ‘when pronounced 
contiguously’. Thus nirdiṣṭe qualifies tasmin to yield the meaning of 
contiguity.

The same is true about the ablative of 1.1.67. This rule specifies the left 
context of an operation. We know from 1.1.67 that when an operation is 
specified by a term in the ablative, it obtains a following item. Consider 
the derivation of āśinaḥ ‘sitting’ from ās + (LĀT $→$ āna) = ās + āna where 
7.2.83 īd āsand applies. This rule requires that āna be replaced by ī. The 
word āsand is in the ablative and hence the replacement operation should 
be applicable to āna which follows ās. However, this rule also carries the 
anuvṛtti of āne from 7.2.82 āne muk where āne is in the locative. Two ques-
tions must be answered here.

(a) Which specification should be treated as decisive for the replace-
ment operation, the ablative of āsand or the locative of āne?

(b) Should ī replace the sthānin in its entirety?

If we follow the ablative specification, āna will serve as the locus of opera-
tion. However, if we follow the locative, āsa becomes the locus. If we follow 
both, there is no locus at all. Here the tradition invokes another paribhāṣā, 
ubhayanirdese pañcamānirdese baliyän (see chapter 7, number 71). This 
paribhāṣā tells us that when specifications in the ablative and in the locative 
are both available, specification made by the ablative is stronger. This will 
clear the way for āna to be the locus of the replacement by ī. It will further 
cause the locative of āne, the element carried from the preceding rule, to 
be interpreted as genitive. This practice of transposition of inflectional 
endings (vibhaktiśparināma) dictated by the context (prakarana) is standard 
practice in Pāṇinian parlance. Now we can return to question (b) above. 
What answers this question is 1.1.54 ādeh parasya which states that operations 
specified by the ablative obtain only on the initial sound segment (aL) 
of what follows. Given this rule, ī will replace only the ā of āna which 
follows āsa. Thus, āsa + (ā $→$ ī)na = āsinā.

The above paribhāṣās relate basically to replacement. There are also two 
major paribhāṣās relating to augments. They are 1.1.46 ādyantau ṭakitaļau 
and 1.1.47 mid aco ‘ńtyāt parah whereby we learn that an augment marked 
with $T$ is introduced as initial element to an item specified in the genitive 
and an augment marked with $K$ is introduced as final element. However, 
if an augment is marked with $M$, it is introduced after the last vowel of that 
for which it is specified.

It is interesting to note that these two rules can also be viewed as excep-
tions to 1.1.49 saṣṭhi sthāneyogā. Consider the derivation of kaṇītā ‘he will go
tomorrow' from kaṇ + (LUT → tā) + (ti → (D)ā) = kaṇ + tās + ā where 7.2.35 ārdhadhātukasya... applies. This rule introduces the augment iT with reference to an ārdhadhātuka affix marked with genitive. In the string in question, tās is such an affix. If we follow 1.1.49, we will have to let iT replace tās, or rather, in view of 1.1.52 alo 'ntyasya, let it replace the final s of tās. However, since the augment iT is marked with T it can be introduced only as an initial element of tās. Similarly, in the derivation of payāmsi, nominative plural of neuter payas 'milk', from payas + (J → ə) as = payas + as, rule 7.1.72 napumsakasya... introduces the augment nUM. The reference for this introduction again is genitive. However, since nUM is marked with M, it can be introduced only after the final vowel of payas. Thus we get paya + nUM + s + as which ultimately yields payāmsi.

Note also that certain items marked with M may involve an exception to rules 3.1.1 pratyayaḥ and 3.1.2 paraś ca. For example, consider 3.1.78 rudhādībhīyah śnam which introduces the vikaraṇa ŚnaM after roots of the rudhādi class when a sārvadhātuka affix denoting agent follows. Now consider the derivation of bhinatti 'he breaks or splits something' where bhid belongs to the rudhādi class. Given the string bhid + ti where ti is a sārvadhātuka affix which denotes agent and has replaced LAT, 3.1.78 will introduce ŚnaM. According to 3.1.2 paraś ca read with 3.1.91 dhātoh, ŚnaM should be introduced after the root. However, since ŚnaM is marked with M, 1.1.47 mid aco' ntyāt paraḥ requires that it be introduced after the last vowel of the root. Thus we get bhi + ŚnaM + d + ti.

It has been stated already that apavāda 'exception' niṣedha 'negation', niyama 'restriction', atideśa 'extension' and vibhāṣā 'option' are rule types which can be found among samjñā, paribhāṣā and vidhi rules. Consider, for example, the following set of rules.

1.1.27 sarvādīṇī sarvanāmāṇī
1.1.28 vibhāṣā dik-samāśe bahuvrihau
1.1.29 na bahuvrihau

The last two rules are exceptions (apavāda) to the first which assigns the term sarvanāman to items enumerated in the list headed by sarva 'all'. Rule 1.1.28 is an exception to 1.1.27 in the sense that what 1.1.27 obligatorily provides (nitya) becomes optional. However, the scope of this option is severely restricted. As is clear from the negation in 1.1.29, sarva cannot be termed sarvanāman in a bahuvrihi compound. However, if a bahuvrihi compound is formed from constituents denoting dīś 'direction', sarva optionally may be termed sarvanāman. Thus, 1.1.28 makes the provision of 1.1.27 optional, though in a restricted manner while 1.1.29 obligatorily negates it elsewhere. Some aspects of exception (apavāda) rules have already been discussed under operational and interpretation rules. Here let us briefly examine niṣedha, atideśa and vibhāṣa rules.
(2.3) Negation (nisedha)

Negation traditionally has been classified into two types: paryudāsa and prasajya. The Mahābhāṣya and subsequent commentaries have extensively discussed these two aspects in connection with various rules. A detailed discussion of negation can be found in Cardona (1967). I shall briefly illustrate these types with examples from Pāṇini’s rules. First, however, the basic characteristics of the paryudāsa and prasajya views of negation must be explained.

The distinctiveness of the two types stems from the two meanings of the negative particle naN: bheda ‘difference’ and abhāva ‘absence’. The bheda meaning of naN is found in paryudāsa while abhāva is attached to prasajya. Consider the sentence abrāhmaṇam ānaya ‘bring (someone) other than a brāhmaṇa’ where what is negated by a (a replacement of naN) in abrāhmaṇa is a brāhmaṇa; one should bring someone other than a brāhmaṇa. Thus, what is negated here is the following constituent of the compound. The act of bringing itself is not negated. Furthermore, simply because brāhmaṇa is negated does not mean that qualities other than brāhmaṇaṁattva ‘brāhmaṇaness’ are negated. Simply because one is asked to bring someone other than a brāhmaṇa does not mean that one can bring an animal. Whatever is to be associated with an action must be similar, at least generically, to what has been negated by paryudāsa. In the above example one can only bring a human being who is not a brāhmaṇa. In short, paryudāsa does not negate an action but negates the following constituent of a negative compound with the assumption that whatever is to be associated with the action must be generically similar to that which was negated.

Let us consider the sentence anṛtam na vaktavyam ‘non-truth should not be spoken’. The na here negates an action. What is provided by vaktavyam ‘should be spoken’ is negated by na. The meaning na here is that of abhāva ‘absence’. This makes nisedha principal and vidhi ‘whatever is provided’ secondary. Abhāva presumes bhāva ‘presence’; in view of this, prasajya negates whatever has been tentatively provided for by the action. This distinction is very important for the correct understanding of Pāṇinian rules involving negation.

The above two sentences clearly illustrate the distinction between paryudāsa and prasajya. In abrāhmaṇam ānaya, the negation is accomplished by a which is the first constituent of a negative compound. As opposed to this, the negation in anṛtam na vaktavyam is accomplished by na which is not part of any compound. In the expression asūryam paśyāni mukhāni where the a of asūryam renders the negation, the meaning is prasajya or absence. The interpretation here is sūryaṁ na paśyanti yāni mukhāni ‘the faces which do not see the sun’.

Consider the following rules.

1.1.42 śi sarvanāmasthānam
1.1.143 suḍ anapumṣakasya
The first rule states that Śi (a replacement for nominative/accusative plural Jas and Šas after neuter) is termed sarvanāmasṭhāṇa. The second rule states that a non-neuter sUT (sU, au, Jas; am, aut: the singular, dual and plural nominative and singular and dual accusative endings) is termed sarvanāmasṭhāṇa. The word anapumṣakasya has the negative naN. The Mahābhāṣya discusses its twofold interpretation. According to a prasajya reading, one would interpret 1.1.43 as a rule split in two: suṭ sarvanāmasṭhāṇaṃ bhavati, and nāpumṣakasya na bhavati. This interpretation will create two problems. The compound anapumṣakasya will not be considered syntactically related (samartha) because naN will not be syntactically related to nāpumṣa; instead, it will be related to bhavati. Secondly, the sarvanāmasṭhāṇa designation of Śi of 1.1.42 will be blocked. This second problem can be resolved by invoking paribhāṣā 62, anantarasya vidhir bhavati pratiṣedho vā, whereby we learn that an operation or cancellation obtains only with reference to the most immediate rule. Thus, the second interpretation of 1.1.43, nāpumṣakasya na bhavati, can only negate the first interpretation of 1.1.43, suṭ sarvanāmasṭhāṇaṃ bhavati, and not 1.1.42 since that will not be most immediate.

Rule 1.1.43 may also be interpreted with reference to anapumṣakasya as a paryudāsa. According to this view, 1.1.43 will be interpreted as sud anapumṣakasya (nāpumṣakabhinnasya) sarvanāmasamjñaṃ bhavati ‘sUT, other than one related to a neuter, is termed sarvanāmasṭhāṇa’. Notice that in this interpretation, the focus is on something other than a neuter. Consequently for its application, 1.1.43 will be looking for something other than a neuter. Hence the neuter Śi of 1.1.42 will be thrown outside the scope of the negation. Rule 1.1.43 now will not negate the assignment of sarvanāmasṭhāṇa in neuter but will assign sarvanāmasṭhāṇa for something other than a neuter. If some other rule, such as 1.1.42, does assign sarvanāmasṭhāṇa in neuter, that will not be negated.

The preceding discussion shows that both interpretations can accomplish the desired results. However, the prasajya interpretation lacks economy (lāghava). It involves splitting 1.1.43 and requires invoking paribhāṣā 62. Commentators prefer a paryudāsa interpretation.

(2.4) Extension (atiśēśa)

Commentators consider a rule atiśēśa ‘extension’ if it transfers certain qualities or operations to something for which they did not previously qualify. The function of an extension rule is thus to widen the scope of application of a technical or operation rule. Normally an atiśēśa rule is formulated by the affix vati: consider, for example, 1.1.56 sthānivad ādeśo ‘nālvidhau. An atiśēśa rule where vati is expressly mentioned is called śrutatiśēśa. A rule where vati is not expressly mentioned but its meaning is implicit is called arthatiśēśa. For example in 1.2.5 asamyogāl liṭ kit, the
meaning of vat̐, i.e., atasmin tadbudhhiḥ ‘cognition of x in y where x is not’ is implicit.

There are yet other classifications of atideśa rules: samjñātideśa ‘extension of term’, sthānyatideśa ‘extension of sthānini’ and yuktideśa ‘extension of same status’, for example. These types are illustrated by 1.2.5 asamyogāl līṭ kit, 1.1.56 sthānivad ādeśa ‘nalvidhau and 1.2.51 lūpi yuktavad vyaktivacane respectively. Rule 1.2.5 provides for certain affixes to be termed kit. Rule 1.1.56 extends the status of a sthānini ‘substituendum’ to its ādeśa ‘substitute’. Rule 1.2.51 allows the retention of the number and gender (vyaktivacana) of the original base in situations where a taddhita affix is deleted by LUP.

Extension rules generally are classified into different categories depending on their function, such as kāryatideśa ‘extension of function’ or rūpataideśa ‘extension of form’. Four other types are distinguished based upon what an atideśa rule provides for: śāstratideśa ‘extension of a rule’, tādātmyatideśa ‘extension of identity’, nimittatideśa ‘extension of condition’ and vyapadeśatideśa ‘extension of appellation’. An example of kāryatideśa is 1.1.21 ādyantvad ekasmin whereby we learn that operations specific to the initial (ādi) or final (antya) element of a given unit obtain even on the single element of a unit which consists only of that one element. Consider the derivation of abhyām, the instrumental, dative or ablative dual of idam ‘this’, where 7.3.102 supi ca applies at a stage when the string is a + bhyām. Rule 7.3.102 requires that the final a of a + bhyām be replaced by its corresponding long vowel (dirgha) when a sup which begins with yN (y, u, r, l…) follows. Now the anga in a + bhyām is not a unit which ends in a. It is a unit which is constituted by a. Since initial and final are relative terms and also since a single unit cannot be understood as constituting its initial or final by itself, rule 1.1.21 is needed. Thus a of a + bhyām can be treated as its own final. This clears the way for its replacement by ā to yield ābhyām. Another instance of kāryatideśa is 1.1.62 pratyayaloca pratyayalaksanam whereby, barring some exceptions, operations specific to an affix obtain even when the affix is deleted. Note here that 1.1.21 may also be treated as vyapadeśatideśa. However, since kārya ‘operation’ is principal, vyapadeśatideśa is subsumed under kāryatideśa.

Rūpataideśa allows a given form x to have a form y for an operation to take place. Consider the derivation of papaṭuḥ ‘they (two) protected’ which is derived from pā + LĪT. LĪT is replaced by tas ‘third person dual’ which, in turn, is replaced by atus. Given the string pā + atus, 6.4.64 āto lopa... deletes the ā of pā. Consequently, the string is reduced to p + atus. Rule 6.1.8 īti dhator... must now apply to order doubling. However, since doubling is ordered with reference to the first vowel of the root and that vowel has been deleted, doubling cannot take place. To resolve this difficulty, 1.1.59 dvirvacane’ ci extends the form ā to zero (0, deletion) which had replaced
the ā. Thus, for purposes of doubling, pō + atus will be treated as having the form pā + atus. This will yield pā + pā + atus, as doubling takes effect. Immediately thereafter pā + pā + atus must forever be treated as pā + p + atus = pāpatus. The scope of rūpātidesā is highly restrictive compared to the scope of kāryātidesā. It should also be remembered that in all these types of atidesā, it is the kārya ‘operation’ which is the focus. As a result, atidesā in general can be looked upon as kāryātidesā.

Sāstrātidesā provides for the extension of application of a given rule to items referenced by a different rule. Consider 4.2.34 kālebhya bhavavat which introduces taddhita affixes after stems denoting kāla ‘time’ under the meaning condition sāsya devatā ‘...is the deity of’. The introduction of these affixes is further constrained by the qualifier bhavavat ‘in a manner similar to bhava’. This apparently refers to the domain of 4.2.92 seye. That is, whatever affixes are introduced after bases denoting kāla in the domain of 4.2.92, the same affixes along with their qualifications may be introduced after the same time-denoting bases to denote sāsya devatā under the provisions of 4.2.34. This is clearly an instance of transfer of rule (sāstrātidesā).

Rule 2.1.2 sub āmanitrīte parānavat svare can be considered an example of tādātmyātidesā. This rule states that for purposes of accent, a preceding pada is treated as part of a following pada provided this latter ends in vocative singular (āmanitrīta). Given the string madrānām rājan ‘O king of the Madra’ where rājan is in the vocative singular following madrānām, madrānām will be treated as part of rājan. Madrānām rājan will be treated as one pada and 6.1.198 āmanitrīsya ca will assign an initial udātta accent (ādyudātta). In the absence of 2.1.2, rājan would have received anudātta.

Rule 1.3.62 pūrvavat sanāḥ exemplifies nimittātidesā. This rule states that the conditions under which a root, while not ending in saN, receives ātmanepada, are extended so that the root receives ātmanepada even when it ends in a saN. Consider sīsāyisate ‘he wishes to recline’ which is derived by introducing the affix suN after the verbal root sīN. Now, sīN takes ātmanepada endings because it is marked with ṃ (1.3.12 anudāttaṁ). ṃ is the nimitta which conditions the occurrence of ātmanepada after sīN. Rule 1.3.62 extends this nimitta to the saN derivates of this root.

(2.5) Option (vibhāṣā)

Rule 1.1.44 na veti vibhāṣā defines vibhāṣā as the meaning of na vā ‘or not’. There are three types of vibhāṣā: prāpte whereby something provided as obligatory (nītya) is made optional, aprāpte whereby something not provided for is provided optionally and ubhayatra where both prāpte and aprāpte provisions are made optional. Rule 1.3.77 vibhasopapadena prattiyamāne, for example, optionally introduces ātmanepada endings. This option is constrained by two factors. First, the root which qualifies for this
option must co-occur with another pada, and second, the co-occurring pada must indicate that the fruit of the action accrues to the agent. Thus, one gets sentences such as svam kaṭam kurute ‘he is making a mat for himself’ where the co-occurring pada svam ‘his own’ indicates that the fruit of the action, here a mat, is intended for the agent. This makes karoti, the use of parasmaiṇḍa, or kurute, the use of atmanepada optional. Remember that rules 1.3.72 svairiṇaithā... through 1.3.76 anupasargāj īnāḥ provide for atmanepada endings obligatorily (nitiya). Rule 1.3.77 makes that obligatory provision optional.

For an example of aprāpta vibhāśā, consider rule 1.2.3 vibhāṣorṇoḥ. This rule states that an affix with initial iṬ optionally is treated as marked with ṇ if it occurs after the verb root urṇuN ‘to cover’. This option will yield two forms: proṇuvitā and proṇuvitā ‘he who is to cover’, both derived from the underlying string pra + urṇu + i + ṭr. The affix with initial iṬ is trC. The a of pra and the u of urṇu will be replaced by a single guṇa vowel to yield proṇu. Given the string proṇu + i + ṭr, the u of proṇu will either be replaced by its guṇa counterpart o or else by uvaN, depending on whether or not i + ṭr is treated as marked with ṇ. This is the option which 1.2.3 provides. Note in this context that 1.1.5 kūti ca disallows any guṇa or vṛddhi replacements if those replacements are conditioned by an affix marked with K, G or ṇ. A guṇa replacement optionally will be available under the provisions of 1.2.3. Thus, what was aprāpta ‘not provided for’ by 1.1.5 became prāpta ‘optionally available’. If the string proṇu + i + ṭr opts for treating i + ṭr as marked with ṇ, a replacement of u by 7.3.84 sārvadhatuka... will be blocked. Rule 6.4.77 aciṣmudhātu..., read with 1.1.5 nic ca, will then apply to replace u with uvaN: proṇu → uv (ĀN → ṇ) + i + ṭr = proṇuvitr. If, on the other hand, i + ṭr is not treated as marked with ṇ, u will be replaced by o which, in turn, will be replaced by av by 6.1.78 eco yavāyāvah to yield proṇu → o → av) + i + ṭr = proṇuvitr.

The third type of vibhāśā is ubhayatra or prāptāprāpta. A classic example of this type is furnished by 6.1.30 vibhāśā svaḥ whereby the root svi ‘to go, move towards’ optionally is ordered to undergo samprasāraṇa before affixes LIṬ and yaN. Consider the derivation of śusāva and śiśvāya, the optional third person singular perfect forms of śi. Given the string svi + a where a is a NāL (3.4.81 liṣṭa...) replacement of iṭP (3.4.78 tiṭpas...) which, in turn, is a replacement for LIṬ, rule 6.1.30 vibhāśā svaḥ applies. The v of svi will be replaced by its samprasāraṇa counterpart u and the resultant string s(v → u)i + a = śui + a will undergo application of 6.1.108 samprasāraṇāca ca whereby the sequence u + i will be replaced by u. This will yield sū + a which will then go through doubling (6.1.8 liṭi dhātor...) to yield sū + sū + a. The u of the second sū will then undergo vṛddhi (7.2.115 aco ṇini) and āy replacement (6.1.78 eco yavāyāvah) yielding sū + s(u → au → āu) + a = śusāva.
If, however, the samprasāraṇa option of 6.1.30 is not accepted, the result will be śīśvāya. In this case, doubling will yield śvi + śvi + a where i of the second śvi will undergo vṛddhi. The resulting ai will then be replaced by āy: śvi + śvi(i → ai → āy) + a = śvi + śvāy + a = śvisvāya. The v of śvi will be dropped by 7.4.60 halādi ेsah to finally yield śisvāya. Note here that the two previous types of vibhāsā were illustrated by explaining how a provision which was available (prāpta) was made optional, and how a provision which was not available (aprāpta) optionally was made available. It is natural then that I now explain how 6.1.30 provides option with reference to both prāpta and aprāpta-vibhāsā.

Rule 1.1.44 defines the meaning of na ‘negation’ and vā ‘option’ as vibhāsā. A question is raised in the Mahābhāṣya (1:324) whether the expression navā in this rule should be interpreted as one particle (nipāta) navā or two particles na and vā. If we read it as one particle it can only give us the meaning of negation, as is attested by the usage grāmo bhavatā gantavyo navā ‘will you go to the village or not’. If this negation then becomes the meaning of vibhāsā it can only provide options in cases of aprāpta-vibhāsā.

On the other hand, one may argue that the question of a negative interpretation does not arise in aprāpta cases, since it is ridiculous to negate a provision when no such provision is available. To resolve this problem and also to justify the function of navā in aprāpta cases, one has to resort to a prasajya view of negation. That is, the very fact that a negative provision is made implies that a positive provision exists. How else can one make a negative provision without having a positive one first? Thus in the aprāpta cases, first a positive provision will be implicitly assumed and then a negative option will be made.

However, this negative navā interpretation cannot work in instances of prāpta-vibhāsā, since a positive provision is explicitly stated, and the question of its implicit assumption for purposes of negation cannot arise. Consequently, negation will simply cancel the positive provision and the result will be a single form. In order to clear this up, Patañjali states (Mbh. I:326-27) that navā should not be interpreted as one particle with a negative meaning but as two particles na and vā meaning negation and option respectively. With this interpretation, the negative na will not have any purpose in aprāpta-vibhāsā, but, vā will provide two optional forms. This interpretation will also work in instances of prāptaprāpta-vibhāsā where na will first negate prāpta thereby bringing prāpta and aprāpta on a par. Consequently, vā will apply to provide the optional forms. The only condition is that na must negate first before vā provides the options.

Let us see how 6.1.30 vibhāsā śveḥ is interpretable in terms of the three vibhāsās. It can be interpreted as an instance of prāpta vibhāsā if one carries, through anuvṛti, the word kīt ‘marked with K’ from 6.1.15 vaciuapi.... As a result, the obligatory samprasāraṇa which is ruled by 6.1.15 will be made
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optional by 6.1.30. On the other hand, if kit is not brought by anuvṛtti and the optional samprasāraṇa is interpreted as applicable to all the LIṬ instances, whether they be kit or akīt 'not marked with K', with the additional stipulation that the now available optional samprasāraṇa of kit will be blocked by 6.1.15 which will act as prior excepted to 6.1.30, we find an instance of prāpta-prāpta or ubhaya-vrāja-vrāja. Thus, an instance of LIṬ marked by kit will receive obligatory samprasāraṇa by 6.1.15 via this stipulation. Kit instances will have samprasāraṇa as prāpta while those of akīt will have it as aprāpta. This would then mean that na will first negate the prāpta samprasāraṇa of kit which subsequently vā will make optional. As far as akīt samprasāraṇa goes, na would not have any purpose. It is vā which would provide the option.

Commentators also refer to yet another type of vibhāṣā commonly known as vyavasthita-vibhāṣā 'fixed option'. This option applies only to some limited forms. The generally accepted view is that vyavasthita-vibhāṣā offers vidhi 'operation' by vā or niśedha 'negation' by na only with reference to specific examples. Rule 6.1.27 śṛtaṁ pāke is an instance of this type of vibhāṣā. This rule provides the ad hoc (nipātana) derivation of the word śṛtaṁ when pāka 'cooking' is denoted. The underlying root for śṛtaṁ is śrā 'to cook'. What 6.1.27 provides is this: root śrā optionally takes the form śr when affix Kīṭa follows, whether or not śrā ends in affix niC. If we interpret the vibhāṣā carried from 6.1.27 as a general option under the particular meaning condition pāka, all the occurrences of śrā will be replaced by śr only in the context of kṣira and havī. Thus we get śṛtaṁ kṣiraṁ 'the rice pudding is cooked' and śṛtaṁ havīṁ 'the food for ritual oblation is cooked'. However if what is cooked is not kṣira or havī, śrā will not be replaced by śr. Other instances of vyavasthita-vibhāṣā are provided by 2.4.55 ajeśa vyaghaṇa-paḥ, 3.2.124 laṭṭaḥ satrṣāṇa-cau... and 1.4.5 vāmī.

Pāṇini also uses vā and anyatarasyām in the sense of vibhāṣā. The names of earlier grammarians, too, are sometimes mentioned to indicate options. Thus, rules 2.4.40 līṭaḥ anyatarasyām, 2.4.50 vibhāṣā lūniṇroh, 2.4.55 vā līṭi and 8.3.19 lopāḥ sāhakalyasya all use different terms to provide for optionality. There is considerable debate whether or not Pāṇini intended to differentiate types of options by using these various terms. One would expect that since he uses more than one term for option, he must have some special differentiations in mind. A recent interpreter of Pāṇini has tried to establish some kind of variation in dialect or style based upon the use of the various terms. However, the tradition does not accept this view. For contemporary studies dealing with optional rules and establishing stylistic variations corresponding to the above terms for option, see Kiparsky (1980) and Sharma (1983). It should be understood in this context that optional variants should not be treated as substandard or incorrect. In Pāṇini's eyes they are all equally correct. Since grammar only
accounts for correct usage, the question of standard and substandard or preferred and incorrect variants does not arise.

Optional rules where Pāṇini uses names of earlier grammarians need some explanation. There are two views on this. According to one view, the citation of a grammarian’s name in a given rule is interpreted as a reference to an authority (pramāṇa). As a result, the form attested by that rule becomes an obligatory form and not an option. According to the second view, such a citation would single out one grammarian according to whom a given form is attested. This interpretation allows for the existence of other forms to which other grammarians may attest. This interpretation clearly supports the view that rules with names of grammarians are option rules. The first view is known as kāryaśabdavāda, the second nityaśabdavāda. The Pāṇinian tradition subscribes to the second view.

There are instances of rules where the name of a grammarian is cited along with the use of vā, one of the terms which Pāṇini uses to denote option. Consider 6.1.92 vā supy āpiśaleh. Kāśikā clearly states that in these instances vā will provide for option. Why then did Pāṇini use the name of Āpiśali when vā is already there to account for the option? Kāśikā says that by citing Āpiśali along with vā, Pāṇini intends to express respect for Āpiśali (Kāś. ad 6.1.92 āpiśaligrhaṇam pūjārtham vety ucyata eva). Rules such as 1.2.55 trṣimṛṣikṣeh kāsyapasya, 5.4.112 gireś ca senakasya, 6.1.123 avaḥ sphoṭāyanasya and 6.3.61 iko hrasvo iyor gālavasya are additional examples of this nature.

(2.6) Ad hoc (nipātana)

Pāṇini uses a considerable number of rules which collectively are referred to as nipātana ‘ad hoc’ rules. Their function is to provide forms not with reference to their derivation process but simply as derived. That is, while operational rules allow us to visualize the full derivational process, ad hoc rules only provide the fully derived forms. Their constituents and derivational process are left to the imagination (see Kātyāṭa ad 5.1.59; Mbh. IV:47) vidhi nipātanayoś cāyam bhedah, yatrāvayavā nirūṣyante samudāyo’ numīyate sa vidhiḥ. yatra tu samudāyah śrūyate’ vayavāś cānumīyante tan nipātanam). Thus, Pāṇini provides certain fully derived forms without mentioning their derivation. Why — primarily for economy and to avoid conflicts with other operational rules. Normally a form which is not derivable by rules of the grammar is treated as if it were derived through nipātana (see Kāś. ad 3.1.123 yad iha lakṣāṇenānupapannam tat sarvaṃ nipātanaḥ siddham).

Three goals are accomplished by the ad hoc rules:

(a) they provide for something which is not available by any other rule (aprāptiprāpaṇa),

(b) they block a provision made available by some rule (prāptivāraṇa), and
(c) they indicate special meaning (adhihārthavivakṣā).

In addition, nipātana are manipulated to provide for option (vibhāṣā: see Kāś. ad 7.2.27 vā dāntaśānta...). However, this purpose can be subsumed under aprāptiprāpāna above. These three provisions are made by ad hoc rules in various areas, including affixation (prataya), replacement (ādesa), augment (āgama), doubling (dvivrucana) and transposition in the shape of a base (praktiviśparināma).

The following rules exemplify the range of nipātanas.

6.1.154 maskaram-maskarinau veṇu-parivrājakayoḥ
3.1.129 pāyya-sānāyya...
3.2.26 phalegrahir ātmambhariś ca
3.2.59 trīg dadhrk...
7.2.30 aparacitaś ca

Rule 6.1.154 is an example of nipātana involving affixes. Two examples, maskara ‘a bamboo stick’ and maskarin ‘a wandering ascetic’, are both derived from māN + DUkrN = mā + kr where māN is a preverb. In case of maskara, the affix is AC whereas for maskarin it is inI. Given the strings mā + kr + a and mā + kr + in, augment sŪT will be introduced to yield mā + s (ŪT → 0) + kr + a = mās + kr + a and mās + kr + in. The r of kr will undergo guṇa and the ā of mā will be shortened. Thus we will get m(ā → a)s + k(r → ar) + a = maskara and m(ā → a)s + k(r → ar) + in = maskarin. Note here that the derivation above is being given for explanatory reasons. Actually, affix placement, sŪT augment and shortening of the ā are all accomplished by nipātana. That is, Pāṇini cites them as derived under the special meaning condition of veṇu ‘bamboo stick’ and parivrājaka ‘wandering ascetic’. Affix placement and other operations are all taken for granted.

Rule 3.1.129 pāyya-sānāyya... also cites four forms derived by nipātana under special meaning conditions. Consider, for example, pāyya ‘a measure of weight’ and sānāyya ‘ritual oblation of food’ which respectively are derived from the underlying strings māN + NyaT and sam + niN + NyaT. What nipātana does in māN + NyaT = mā + ya is to replace m by p. Such a replacement cannot be accomplished by any other rule. Given the string (m → p)ā + ya, 7.3.33 ātō yūk... will introduce yŪK to yield pā + y(ŪK → 0) + ya = pāyya. The function of nipātana in sānāyya again is replacement. Given the string sam + ni + ya, a of sam will be replaced by ā. Furthermore, i of ni will be replaced by the vrddhi vowel ai. Thus we get s(a → ā)m + n(i → ai) + ya = sām + nai + ya. The basic function of a nipātana is now evident. Here, it will replace the ai of nai by āy. Note again that such a replacement is obviously ad hoc.

Rule 3.2.26 phale grāhīr... illustrates, among other things, the application of augmentation mŪM by nipātana. An example is ātmambhariḥ ‘he who is able to support himself’ where given the string ātmam + am + DUbrN + iN = ātmam + br + i, ātmam receives the augment m(ŪM) by nipātana.
Note that the affix \( iN \) is also introduced after verbal root \( DUbhrN \) by \( nip\breve{\text{a}}\text{tana} \). Of course, this occurs under the condition that there is a co-occurring \( pada \) underlying \( \breve{\text{atman}} \) and denoting object. Thus, \( \breve{\text{atma}}(n \to \emptyset) + m(\breve{\text{UM}} \to \emptyset) + bh(\breve{r} \to ar) + i = \breve{\text{atmambhari}} \).

Rule 7.2.30 \( \text{apacita} \) ca illustrates how the shape of a base can be transposed via \( nip\breve{\text{a}}\text{tana} \). Consider the derivation of \( \text{apacita} \) 'respected' from \( apa + c\breve{\text{ay}}R + K\breve{a} \) where \( K\breve{a} \) is a \( ni\text{\breve{\text{ist\breve{h}}}} \) (1.1.26 \( \text{ktktavat\breve{\text{u}} ni\text{\breve{\text{ist\breve{h}}}}}) \) suffix introduced after the verbal root \( c\breve{\text{ay}}R \) used with the preverb \( apa \). Given the string \( apa + c\breve{\text{ay}}(R \to \emptyset) + (K \rightarrow \emptyset)ta = \text{apac\breve{a}y} + ta \). Rule 7.2.30 optionally will rule two things: the change of the \( c\breve{\text{ay}} \) form of the root to \( ci \) and the disallowing of the augment \( iT \). This will produce the form \( apa(c\breve{\text{ay}} \rightarrow ci) + ta = \text{apacita} \). If the option allowed by \( nip\breve{\text{a}}\text{tana} \) is not accepted, the root will not take the form \( ci \) and \( iT \) will apply. This will yield the optional form \( \text{apac\breve{a}y} + i(t \rightarrow \emptyset) + ta = \text{apac\breve{a}yita} \). It should be clear from this discussion that the purpose of \( nip\breve{\text{a}}\text{tana} \) is to accomplish a variety of tasks without systematically following specific rules.
7

Sanjñās and Paribhāsās

The following is a select list of the sanjñās and paribhāsās which receive frequent reference in this volume. Exceptions to and elaborations of these definitions are not given here. However, both the first and last rules of the section of the grammar which treats the term being defined are given in the parentheses in order to facilitate easy reference to the rules where that term is more fully discussed.

A. SANJÑĀS

1. vrddhi (1.1.1 vrddhir ādaic)
   ā, ai and au
2. guṇa (1.1.2 adeṇ guṇah)
   a, e and o
3. samyoga (1.1.7 halo 'nantarā samyogaḥ)
   a sequence of consonants
4. anunāśika (1.1.8 mukhanāśikāvacano 'nunāśikāḥ)
   a sound pronounced in the mouth and nose at once
5. savarna (1.1.9 tulyāyasya pratyatnam savarṇam — 1.1.10 nājjhalau)
   two or more sounds pronounced with the same articulation effort (pratyatna) at the same place of articulation (sthāna) in the oral cavity
6. pragṛhyā (1.1.11 idūded-dvivacanām pragṛhyam — 1.1.19 id-ūlau ca saaptmyartthe)
   a dual ending terminating in ē, ū or e
7. gha (1.1.20 dādhāghv adāp)
   roots of the form dā and dhā, except for ḍāP 'to cut' and daiP 'to clean'
8. gha (1.1.22 taraptamapa gu ghah)
   affixes -taraP (5.3.57 dvivacana...) and -tamaP (5.3.55-56 atiśāyane...)
9. samkhya (1.1.23 bahuganaavatudati samkhya)
   bahu 'many', gana 'group' and items ending in the affixes vatU (5.2.39 yattadetebhyah...) and ḍati (5.2.41 kimāh...)
10. saṭ (1.1.24 śnāntā saṭ — 1.1.25 ḍati ca)
    a samkhya which ends in ś or ṇ
11. niṣṭhā (1.1.26 ktktavatū niṣṭhā)
    affixes Kta and KtavatU (3.2.102 niṣṭhā)
12. sarvanāman (1.1.27 sarvādini sarvanāmāni — 1.1.38 antaram...)
    items listed in the set (gana) headed by sarva 'all'
13. *avayāya* (1.1.37 svarādi nipātam avayayam — 1.1.41 avayāyibhāvaś ca) items listed in the set headed by svar 'sun, heaven' and those termed nipāta (1.1.56 prāg rīśvarāram nipātāḥ)

14. *sarvanāmasthāna* (1.1.42 Ā śarvanāmasthānam — 1.1.43 suḍ anapum-sakasya)
Śi, a replacement for Jas and Śas after a neuter base, (cf. 7.1.20 jassasoh śi); also suṬ (sU, au, Jas; am, auṬ) occurring after a non-neuter base

15. *vibhāṣā* (1.1.44 na vēti vibhāṣā) the meaning of na vā 'or not'

16. *samprasāraṇa* (1.1.45 ig yanah samprasāraṇam) replacement of yN (y, v, r, l) by iK (i, u, ṛ, l)

17. *lopa* (1.1.60 adarśanam lopah — 1.1.61 pratyayasya lukšlulupah) the meaning of adarśana 'non-appearance'; the non-appearance of an affix is termed LUK, ŚLU or LUP

18. *ti* (1.1.64 aco' ntyādi ti) that part of an item which begins with the last of its vowels

19. *upadāḥ* (1.1.65 alo’ ntyāt pūrva upadāḥ) the penultimate sound segment of an item

20. *vṛddha* (1.1.73 vṛddhir yasyācām ādis tad vṛddham — 1.1.75 en prācām dese) an element whose first vowel is a vṛddhi

21. *hrasva, dirgha and pluta* (1.2.27 ūkālo’ jj hrasvadīrghaplutah) a vowel with time duration equivalent to u, ū or u' respectively

22. *udāttā* (1.2.29 ucchār udāttāḥ) a vowel pronounced with high pitch

23. *anudāttā* (1.2.30 nīcār anudāttāḥ) a vowel pronounced with low pitch

24. *svārīta* (1.2.31 samāhārāḥ svārītaḥ) a vowel pronounced with a combination of udāttā and anudāttā

25. *aprīkta* (1.2.41 aprīkta ekāl pratyayaḥ) an affix consisting of a single sound segment

26. *karmadhāraya* (1.2.42 tatpurūṣaḥ samānādhihikarāṇaḥ karmadhārayaḥ) a tatpurūṣa (2.1.22 tatpurūṣaḥ) compound with constituents in syntactic coordination

27. *upasarjana* (1.2.43 prathamānirdiśṭam samāsa upasarjanam — 1.2.44 ekāvibhakti...) an item cited in the nominative in a rule of compound formation

28. *prātipadika* (1.2.45 arthavad adhātur apratyayaḥ prātipadikam — 1.2.46 kṛt-taddhita-samāsāś ca) a meaningful item which is not an affix or a root; also an item which either ends in a kṛt (3.1.93 kṛt atiṇ) or a taddhita affix (4.1.76 taddhitāḥ) or is a samāsa 'compound'

29. *dhātu* (1.3.1 bhūvādayo dhātavaḥ)
items listed in the sets headed by the one beginning with bhū ‘to be, to become’; also items terminating in affixes saN etc., (3.1.32 sanādy antā dhātavah) 
30. it (1.3.2 upadeśa’ j anunāsika it — 1.3.8 laśaku atadāhite) a nasalized vowel of an item in upadeśa ‘initial citation’ 
31. nadi (1.4.3 yūstirākhyau nadi — 1.4.6 niti hrasvaś ca) feminine forms ending in ī or ū 
32. ghi (1.4.7 śeṣo ghī asakhi — 1.4.9 ṣaṣṭhīyuktaś chandasi vā) forms ending in ī, or ū except for sakhi ‘friend’ 
33. hrasva (1.4.10 hrasvaṃ laghu) a short vowel 
34. guru (1.4.11 samyoge guru — 1.4.12 dīrgham ca) a short vowel occurring before a sequence of consonants, or a long vowel 
35. aṅiga (1.4.13 yasmāt pratyayavidhis tadādi pratyaye’ṅgam) a pre-suffixal base 
36. pada (1.4.14 suptiṇantaṃ padam — 1.4.17 svādiśu asarvanāmasthāne) an item which ends in a sUP (4.1.2 svaujas...) or a tīN (3.4.77 tīptāṣṭhi...) 
37. bha (1.4.18 yaci bham — 1.4.20 ayasmayādini ca) a form which occurs before a svādi suffix beginning with y or aC but not a sarvanāmasthāna 
38. apādāna (1.4.24 dhruvat apāye ṣpadānam — 1.4.31 bhuvah prabhavah) that which is dhruva ‘fixed’ when movement away (apāya) is denoted 
39. sampradāna (1.4.32 karmanā ṣam abhiprati it sa sampradānam — 1.4.41 anupratigrṇaś ca) that which the agent (kartr) intends (as the goal) by (means of) his action 
40. karaṇa (1.4.42 sādhakatamaṃ karaṇam — 1.4.44 parikrayaṇe sampradānam anyatarasyām) that which, more than anything else, serves as a means 
41. adhikaraṇa (1.4.45 ādhāro’ dhikaraṇam — 1.4.48 upāṉvadhyaṉ vasāḥ) that which serves as ādhāra ‘locus’ 
42. karmāṇa (1.4.49 kartur īpsitataṃ karmā — 1.5.53 hṛkṛt anyatarasyām) that which the agent most wishes to reach 
43. kartṛ (1.4.54 svatantraḥ kartā — 1.4.55 tatprayojaka hetuś ca) that which is svatantra ‘independent’ 
44. nipāta (1.4.56 prāg rīśvarāṃ nipātāḥ — 1.4.97 adhir īśvare) items enumerated up to rule 1.4.97 adhir īśvare 
45. upasarga (1.4.58 prādaya upasargāḥ kriyāyoge — 1.4.59 gatiś ca) nipātas enumerated in the set headed by pra when used with a verb; they are also termed gati 
46. karmapravacaniyā (1.4.83 karmapravacaniyāḥ — 1.4.97 adhir īśvare) items termed nipāta and enumerated up to rule 1.4.97
47. parasmaipada (1.4.99 laḥ parasmaipadām)  
replacements of LA (3.4.77 tīptaṣṭiḥi...) other than those denoted by taṆ and āna (SānaC and KāṇaC)

48. ātmanepada (1.4.100 taṁśāṇaḥ ātmanepadām)  
replacements of LA denoted by taṆ and āna

49. prathama, madhyama, uttama (1.4.101 tiṇas trīṇi trīṇi prathamamadhyamottamāḥ)  
ekavacana, dvivacana, bahuvacana (1.4.102 tāṇy ekavacana-dvivacanabahuvacanāṇy ekaśaḥ — 1.4.103 suṇaḥ)  
individual members of each triplet of tiṆ and sUP

51. vibhakti (1.4.104 vibhaktiḥ ca)  
triplets of tiṆ and sUP

52. samhitā (1.4.109 paraḥ sannikaraṇaḥ samhitā)  
m maximum proximity between sounds

53. avasāna (1.4.110 virāmo' vasānaṃ)  
cessation of speech

54. samāsa (2.1.3 prāk kaḍārāt samāsaḥ)  
items enumerated prior to 2.1.38 kaḍāraḥ karmadhāraye

55. avayayibhāva (2.1.5 avayayibhāvah)  
compounds enumerated by rules prior to 2.1.22 tattarūṣaḥ

56. tattarūṣa (2.1.22 tattarūṣaḥ — 2.1.23 dviguṣ ca)  
compounds enumerated prior to 2.2.23 śeṣo bahuviṛīhiḥ; dvigu is also termed tattarūṣa

57. dvigu (2.1.52 sāṃkhya-pūrva dviguḥ)  
a tattarūṣa compound (2.1.51 taddhitārtha...) with saṃkhyaḥ 'number' as its first constituent

58. bahuviṛīhi (2.2.23 śeṣo bahuviṛīhiḥ)  
the remainder of the tattarūṣa compounds

59. dvandva (2.2.29 cārthe dvandvah)  
a compound denoting the sense of ca 'and'

60. āmantrita (2.3.48 sā’ mantritam)  
a form which ends in the vocative and denotes sambodhana ‘address’

61. sambuddhi (2.3.49 ekavacanam sambuddhiḥ)  
an āmantrita terminating in singular

62. ṭrayaya (3.1.1 ṭrayayaḥ)

63. upapada (3.1.92 tattropapadām saptamistham)  
an item cited in the locative in the domain of 3.1.91 dhātoḥ

64. kṛt (3.1.93 kṛd atiṇi)  
an affix other than that denoted by tiṆ

65. kṛtya (3.1.95 kṛtyaḥ)  
kṛt affixes enumerated by rules prior to 3.1.133 ṛuḷṛcuau

66. sat (3.2.127 tau sat)  
affixes Śatṛ and ŚaṇaC (3.2.124 laṭaḥ śatṛ-sānačaḥ...
67. sārvadhātuka (3.4.113 tiṃśū sārvadhātukam) 
affixes denoted by tiṆ and marked with Ś
68. ārdhadhātuka (3.4.114 ārdhadhātukam īśeṣaḥ) 
the remaining affixes
69. taddhita (4.1.76 taddhitāḥ) 
affixes enumerated by rules 4.1.76-5.4.160 nispravāniś ca
70. gotra (4.1.162 apatyam pautraprabhṛti gotram) 
grandson and subsequent offspring
71. yuvan (4.1.163 jivati tu vamsyeyuvā) 
a gotra offspring while his father, uncle, etc., are alive
72. tadrāja (4.1.172 te tadrājāḥ; 5.3.119 īvyādayas tadrājāḥ) 
taddhita affixes enumerated by 4.1.166 j nanopadaśabdāḥ...—4.1.176 na 
pracyabhargādi... and 5.3.112 pūgānño...—5.3.119 īvyādayas...
73. abhyāsa (6.1.4 pūrvo bhyāsāḥ) 
the first element of a doubled string
74. abhyāsta (6.1.5 ubhe abhyāstam) 
both the elements of a doubled string
75. āmṛṣa (8.1.2 tasya paramāṃsṛṣa) 
both the second element of a string ordered for doubling by rules headed 
by 8.1.1 sarvasya dvē

B. PARIBHĀṢĀS

76. 1.1.3 iko guṇavrddhi
For a substitute (ādesa) ordered with the express mention of the term 
vṛddhi (1.1.1 vṛddhir ādaic) or guṇa (1.1.2 adeṇ guṇah); iK (i, u, r, l) 
alone should be treated as substituendum (sthānin). However, this 
paribhāṣā is not valid when 
(a) the replacement is conditioned by an ārdhadhātuka suffix which 
causes the deletion of part of a root (1.1.4 na dhāṭulopa ārdhadhātuke), 
(b) the replacement is conditioned by an affix marked with K, G, Ň 
(1.1.5 kniti ca), or
(c) the replacement refers to the iK of īdēhiN‘to illuminate’, vēviN‘to 
go, pervade’ or iT (7.2.35 ārdhadhātukasya...).
77. 1.1.46 ādyantau tāktitau 
A linguistic element marked with T or K is introduced as the initial or 
final element respectively of that for which it is specified.
78. 1.1.47 mid aco‘ntyāt parah 
A linguistic element marked with M is introduced after the last vowel 
of that for which it is specified.
79. 1.1.48 ec ig hravādeśe 
For a short substitute ordered for eC (e, o, ai, au), iK alone should be 
treated as substitute.
80. 1.1.49 *ṣaṣṭhī sṭhāneyogā*
A *ṣaṣṭhī* 'genitive', not otherwise interpretable, denotes the relation 'in place of'.
81. 1.1.50 *sthāne’ntaratamah*
A substitute (*ādeśā*) must be most similar to its substituendum (*sthānīn*).
82. 1.1.51 *uraṇ raparaḥ*
A substitute of *r* denoted by *aNy* (*a, i, u*) is automatically followed by *r*.
83. 1.1.52 *alo’ntyasya*
A substitute specified for an item in genitive replaces the final sound segment (*aL*).
84. 1.1.53 *nic ca*
A substitute specified for an item in genitive and marked with *N* also replaces the final sound segment.
85. 1.1.54 *ādeḥ parasya*
A substitute specified for a following item replaces the initial sound segment.
86. 1.1.55 *anekālśit sarvasya*
A substitute specified for an item in genitive, consisting of more than one sound segment or marked with *S*, replaces the entire substituendum.
87. 1.1.62 *pratyayalope pratyayalakṣaṇam*
An operation conditioned by an affix applies even if the affix is deleted but not when the operation relates to an *āṅga* (1.4.13 *yasmāt*...) and the deletion is accomplished by *LUK, ŚLU*, or *LUP* (1.1.63 *นาลูมยังกยสยา*).
88. 1.1.66 *tasmiṃ iti nirdiṣte pūrvasya*
An item specified in the locative forms the right context for an operation on what precedes.
89. 1.1.67 *tasmād ity uttarasya*
An item specified in the ablative forms the left context for an operation on what follows.
90. 1.1.68 *svaṃ rūpam śabdasyāśabdasamjñā*
A linguistic item other than that which is a *samjñā* only denotes its form.
91. 1.2.28 *açaś ca*
Replacements specified by *hrasva* 'short', *dīrgha* 'long' and *pluta* 'extra-long' occur only in place of *aC* 'vowels'.
92. 1.3.10 *yathāsankhyam anudeśāḥ samānām*
Assignment of equivalents for equal numbers of elements follows the order of enumeration.
Some Additional Paribhāṣās

The following paribhāṣās are not stated explicitly in the Aṣṭādhyāyī but implicitly are assumed by the tradition. They are discussed in the Paribhāṣenduṣekhara of Nāgėśa. The number in the parantheses following the rule is the number which the paribhāṣā has in the PS.

93. vyākhyaṅato viṣeṣapratipattir nahi sandehād alaṅkanam (1)

Proper understanding of a rule is achieved through the explanations of the learned. A rule does not become a non-rule simply because one has doubts. For example, Pāṇini employs N as an it twice in the Śiva-sūtras. Given an abbreviatory term aN or iN, one may ask whether the N is the one given in Śs (1) aiN or Śs (6) lĀN. Such questions are answered by the explanations of the learned. Here, the answer is: the N of iN is that of Śs (6) lĀN, while the N of aN is that of Śs (1), except in rule 1.1.69 anudit savarṇasya... where it refers to Śs (6).

94. anekāntā anubandhāḥ (4)

Items termed it do not become part of that to which they are attached. Consider rules 1.1.55 anekāl śit sarvasya and 5.3.3 idam iṣ. Rule 1.1.55 provides for a substitute to replace its substituendum in toto if the substitute either consists of more than one aL 'sound segment' or is marked with Ś. Rule 5.3.3 introduces iṣ, an item marked with Ś, as a substitute for idam. According to 1.1.55, iṣ will replace idam in toto since iṣ is marked with Ś. However, if Ś is considered part of iṣ, iṣ will become an item consisting of more than one aL. Consequently, the anekāl 'more than one aL' condition of 1.1.55 would bring about the total replacement of idam by iṣ, making the śit condition vacuous. Pāṇini's use of śit in 1.1.55 becomes an indicator (jnāpaka) for the existence of this paribhāṣā. That the replacement of idam by iṣ is accomplished on the basis of Ś and not anekālta also shows that its are not used as the basis for treating an item as consisting of more than one aL (cf. paribhāṣā 6: nānubandhakakṛtam anekāltaṃ).

95. nānubandhakakṛtam asārūpyam (8)

Items termed it are not a basis for a distinction (bheda) between forms. Rule 3.1.94 vā sarūpo striyām states that, except for rules contained in the domain headed by 3.3.94 striyām..., affixes dissimilar in form optionally
are introduced after verb roots as alternatives. Except for affixes in the
domain of 3.3.94, all other affixes, if dissimilar in form, will be introduced
alternatively. Note that the domain of 3.3.94 is contained within the larger
domain of 3.1.91 dhātoḥ. Thus, 3.1.96 tavyattavyāniyarah introduces
tavyaT, tavya and aniyaR. The first two will be considered similar in form
since their difference is due to an it. However, aniyaR obviously will be
treated as different in form. Thus, aniyaR may be used alternatively with
tavya and tavyaT. Similarly, rule 3.1.133 nūltreau introduces affixes nūL
and trC as possible alternatives. Consider also rules 3.2.1 karmany an and
3.2.3 āto unupasarge kah whereby aV and Ka are introduced. Rule 3.2.3 is
an exception to 3.2.1. If this paribhāṣā is not accepted, however, these two
affixes will be treated as alternants. In order to facilitate the obligatory
blocking by 3.2.3 of 3.2.1, we have to accept that an it should not be treated
as the basis for distinguishing forms.

96. ubhayagatir iha bhavati (10)

In this grammar, a term may be taken as denoting a technical (kṛtrima)
meaning, a non-technical (akṛtrima) meaning or both types of meanings,
either at different times or at the same time. Consider rule 1.1.1 vrddhir
ādaic where vrddhi is a technical term which denotes ā, ai and au. This term
is always interpreted in a technical sense and not in the non-technical
sense of ‘growth’. Rule 1.1.23 bahuganavatudati samkhya introduces
samkhya, again a technical term, defined as items such as bahu ‘many’, gana
‘group’ or those which end in affixes vatU or ḍati. However, the non-tech-
nical meaning of samkhya, ‘number’, is also encountered in the grammar.
The context and the desired results determine whether the technical or
non-technical sense, or both, should be accepted. Just as in ordinary
usage, a word may have different meanings in different contexts. In ordi-
nary usage the word saindhava may mean ‘horse’ or ‘salt’; in any one con-
text, however, only one meaning is understood. If the context is food, the
meaning is ‘salt’; if not, the meaning is ‘horse’. In the grammar, if the
desired results are obtainable by either interpretation, one should operate
with the technical interpretation (cf. kṛtrimākṛtrimayoh kṛtrime kāryasam-
pratyayah).

The following rules exemplify how context determines whether the
technical or non-technical meaning of a term should be understood.
5.1.22 samkhyaḥ atiśadantāyāḥ kan (non-technical meaning of samkhya)
1.3.14 kartari karnavyatihāre (non-technical meaning of karma, i.e.
action)
3.1.17 sadbavairakalahābhraṇaṃvameghebhyaḥ karaṇe (non-technical
meaning of karma)
7.1.54 hrasva-nadyāpo nūt (technical meaning of nadi)
2.1.20 nadibhiś ca (non-technical meaning of nadi, i.e., river)
97. pratyayagrahaṇe yasmāt sa vihitās tadādēs tadantasya grahaṇam (24)

When an affix is used in a rule to specify an operation, the affix denotes a word-form which begins with the base after which the said affix is introduced and extends up to and includes that affix.

Consider 4.4.20 kīrer mam nityam which obligatorily introduces the affix mam. The item after which mam is introduced is specified by affix Ktri. According to this paribhāṣā, Ktri should denote a word-form which begins with the item after which Ktri is introduced and should also include and terminate with Ktri. Thus, rule 3.3.88 dvitaḥ ktriḥ introduces the affix Ktri to denote either a non-agent participant or bhāva. Furthermore, Ktri can only be introduced after roots which have DU as an it. Thus, Ktri may be introduced after verb roots such as DU·pacAŚ ‘to cook’, DU·vapAŚ ‘to sow’ or DU·krī ‘to do, make’ etc. Rule 3.3.88 dvitaḥ ktriḥ will thus produce forms such as pac + tri → paktri, vap + tri → uptri and kr + tri → kṛtri.

Let us now return to 4.4.20 kīrer mam nityam and the present paribhāṣā. Affix ktri in 4.4.20 refers to the item after which -mam should be introduced. According to the present paribhāṣā, this item should begin with an item after which Ktri is introduced. Such items, according to 3.3.88, may be pac, vap and kr. Furthermore, such an item should terminate in Ktri.

A question may arise here. Since -mam in 4.4.20 is also an affix, should not it refer to an item which begins with that after which -mam is introduced and terminates in mam? The answer is no, for this paribhāṣā does not apply with reference to an affix which is being introduced. This paribhāṣā focuses on affixes which have already been introduced, not on affixes such as -mam which are about to be introduced (cf. pratyayagrahaṇe cāpaṁcamyāḥ, paribhāṣā 26 which the Mahābhāṣya cites as a vārttika).

98. uttarapadādhiṅkāre pratyayagrahaṇe na tadantagrahaṇam (26)

This paribhāṣā requires that in the domain of uttarapada, i.e. 6.3.1 alug uttarapade to 6.3.138 samprasārānaśya, an affix denotes only its own form. An affix in the above domain does not denote a form that terminates with that affix. Consider rule 6.3.42 gharupakalpa... which requires that, other things being equal, a polysyllabic word ending in ṇi, i.e. ī, is replaced by short ī when, among other things, the affix gha follows. The term gha refers to affixes tarp and tamaP. For proper application of 6.3.42, gha should only refer to tarp and tamaP and not to items ending in these affixes. For example, the ī of ga vítarā and ga vítamā will be shortened before tarp and tamaP to produce ga vítarā and ga vítamā. However, if one interprets gha as referring to the entire item which ends in gha, as is the case in the previous paribhāṣā, forms such as kumāriga vítarā and kumāriga vítamā would be subject to short ī replacement for the long ī of kumārī under the condition of ga vítarā and ga vítamā, forms ending in tarp and tamaP. This will produce undesired results. The short ī
replacement applies only to the ĭ of gaurī, not to the ĭ of kumārī in kumārigaurītārā or kumārigautamā.

99. samjñāvidhau prayāyaagrahaṇe tadantagrahaṇam nāsti (28)

An affix does not refer to an item which ends in it when it is used in a rule that defines a term. Consider 1.1.21 ṭaraṭamaṇapau ghaḥ which defines the term gha as affixes ṭaraP and tamaP. According to this paribhāṣā, ṭaraP and tamaP should not refer to items such as gaurītārā and gaurītamatā which end in them. This too is a negation of what was provided by paribhāṣā 97.

100. vyapadesivad ekasmin (31)

That which applies to the central denotatum of an item may also apply to a single item. Vyapadesi in this paribhāṣā refers to proper signification or central denotatum. Consider the word jyeṣṭhaḥ ‘oldest’ in ayaṁ me jyeṣṭhaḥ puṭraḥ ‘this is my oldest son’. What if a person has only one son? Would he say ayaṁ me jyeṣṭhaḥ? Normally not; but he could say ayaṁ me jyeṣṭhaḥ, ayaṁ eva me kaṇiṣṭhaḥ ‘this is my oldest as well as my youngest son’. Here, for certain purposes, an only son is being treated as both oldest and youngest. Similar events occur in the grammar. For example, 6.1.1 ekāco dve prathamasya requires doubling of the part of a root constituted by the first of its vowels. This doubling is possible in cases such as jāgr where jā is the form constituted by the first vowel. Consider, however, roots such as pac where the root has only one vowel. This paribhāṣā will, for purposes such as doubling, allow the a of pac to be treated as the first vowel. Consequently, the form pa constituted by the first vowel may be doubled.

101. yasmin vidhis tadādāv algrahaṇe (34)

A sound segment used as a qualifier in the locative to specify an operation, requires that the qualified be interpreted as beginning with that sound segment. Consider rule 6.1.79 vānto yī prayāye read with the anuvṛtti of ecaḥ, the genitive singular of eC, from rule 6.1.78 eco ‘yavōyavāḥ. In the absence of this paribhāṣā yī, the sound segment y used in the locative as a qualifier to prayāye, will be interpreted as referring to that which ends in y. This interpretation which stems from 1.1.72 yena vidhis tadantasaya will interpret rule 6.1.79 as follows: a replacement ending in v, i.e. av, āv, comes in place of eC when an affix ending in y follows. This rule will be vacuous because there is no affix which ends in y. Consequently, yī should not be interpreted in view of 1.1.72. Instead it should be interpreted as ‘when (an affix) which begins with y follows’. Rule 6.1.79 can thus be interpreted properly as: a replacement in v comes in place of eC when an affix beginning with y follows.

Now consider rule 7.2.58 gamer it parasmaipadeṣu which has the anuvṛtti of se, the locative singular of s, and ārdhadhātukasya. This rule introduces
the augment $it$ to an ārdhadhātuka affix when it occurs after gam ‘to go’ and is followed by an affix termed parasmaipada. The ārdhadhātuka affix which receives the augment $it$ is qualified by se. Again, in view of rule 1.1.72, se, could be interpreted as ‘that which ends in s’. Rule 7.2.58 would then be able to introduce $it$ only when an ārdhadhātuka affix terminating in $s$ occurs after gam and is followed by a parasmaipada affix. This will block the derivation of gamisyati ‘he will go’ where the ārdhadhātuka (3.4.114 ārdhadhātukaṁ šeṣaḥ) affix after gam is sya (3.1.33 syataśi...). By accepting this paribhāṣā, sya can receive the augment $it$ because it is an ārdhadhātuka affix beginning with $s$.

102. ekadesāvikṛtam ananyavat (38)

Even when modification (vikāra) occurs to part of an item that item is still treated as what it was. This paribhāṣā is also supported by lokanyāya ‘norm in the outside world’. As a dog who loses its tail still is treated as a dog, so does a form receive the same treatment even though it has lost part of itself or undergone some modification. Consider abhavat ‘he became’ and bhavatu ‘may he become’ where abhavat, a form terminating in $ti$, has lost its final $i$, and bhavatu, again a form terminating in $ti$, has had its final $i$ replaced by $u$. Rule 1.4.14 suptīnantam padam requires that the term pada should be assigned only to those items which end in a $sUP$ or $tiN$. However, abhavat ends in $i$ and bhavatu ends in $tu$. The original $ti$ which qualified abhavat and bhavatu as padas has been modified. In the absence of this paribhāṣā, the above two items cannot be termed padas. It should be remembered in this connection that this paribhāṣā does not apply when the modified part of an item conditions an operation, or the modification is excessive.

103. pūrvaṇaṇaṁ taraṅgāpavādānāṁ uttarottara balīyaḥ (39)

This paribhāṣā decides the comparative strength of pūrva ‘prior’, para ‘subsequent’, niya ‘obligatory’, anitya ‘non-obligatory’, antaranīya ‘externally conditioned’, bahiraṅga ‘externally conditioned’ and apavyāda ‘exception’ rules. In short, a subsequent rule is more powerful than a prior rule, an obligatory rule more powerful than a subsequent rule, an internally conditioned rule more powerful than a subsequent or obligatory rule, and an exception more powerful than a subsequent, obligatory or internally conditioned rule. (The relationships existing among these rules are illustrated in detail on pages 85-87.)

104. punah prasaṅgāvijñānād bhavati (40), and
105. sakṛd gatau vipratīṣedhe yad bādhitaṁ tad bādhitam eva (41)

These two paribhāṣās relate to the scope of 1.4.2 vipratīṣedhe param kāryam. This rule states that when there is a conflict (vipratīṣedha) in the
application of two rules, the one subsequent in order should apply. 

Vipraṭiśedha is defined in two ways:

(a) tulyabalatā 'conflict created by two rules of equal strength', and

(b) asambhava 'impossible application of two rules simultaneously'.

The expression param kāryam also is interpreted in two ways:

(c) only the subsequent should apply, and

(d) apply the subsequent.

Interpretation (c) makes the ruling of 1.4.2 restrictive (niyama) whereas interpretation (d) makes it operational (vidhi).

Paribhāṣā 104 relates to the asambhava interpretation of vipraṭiśedha. If (b), the asambhava interpretation is accepted, then, after a subsequent rule has been applied, the prior rule which had been blocked may also apply, should there be an occasion for it. As opposed to this, paribhāṣā 105 relates to the tulyabalatā interpretation of vipraṭiśedha which, since it goes hand in hand with the restrictive interpretation of param kāryam, yields an interpretation of 1.4.2 whereby a subsequent rule blocks the application of a prior rule permanently. If vipraṭiśedha is of the tulyabalatā type, a prior rule once blocked by a subsequent rule remains blocked forever.

Now consider some examples. Rule 2.2.32 dvandve ghi states that an item termed ghi (1.4.7 seṣa ghy asakhi) is named upasarjana 'secondary' and is placed first in a dvandva compound. Rule 2.2.33 ajādy antam states that a constituent which begins with an aC and terminates in a also is placed first in a dvandva compound. Given the analysed form (vigrāhavākya) agniś ca indraś ca 'Indra and Agni' which is parallel to the compound indrāgni, agni will be termed ghi by 1.4.7 and in view of rule 2.2.32 should be placed first. The resulting compound would be *agnindrau. In view of rule 2.2.33, indra should be placed first since it begins with an aC and ends in a. This conflict can be resolved only by invoking 1.4.2. The vipraṭiśedha here is tulyabalatā.

Another example of tulyabalatā conflict is found in the derivation of tisṛṇām 'of the three' where, given the string tri + ām, two rules apply. Rule 6.3.48 tres trayah requires that tri be replaced by trayas. Rule 7.2.99 requires that tri be replaced by tisṛ. These rules are equal in strength. By invoking 1.4.2, tri is replaced by tisṛ to yield tisṛ + ām → tisṛṇām. Now if, by invoking 1.1.56 sthānivat ādeso' nalvidhau, we take tisṛ as tri, rule 6.3.48 again may find scope of application. Since the vipraṭiśedha here involves tulyabalatā, however, 6.3.48 will remain blocked forever. This is what sakṛd gatau..., the second paribhāṣā, accomplishes.

Let us now consider some examples where vipraṭiśedha is interpreted as asambhava. Consider rule 3.1.133 nviṭrcau which introduces affixes NviL and trC after verb roots. The conflict concerns whether both affixes should be introduced simultaneously or in turn. Since a simultaneous application is impossible, NviL and trC will be introduced in turn.
Similarly, given the string ajara + Jas, where 7.1.20 jaśasah śih applies to replace Jas by Śi, ajara + (Jas → Śi) = ajara + i, two rules become applicable: 7.1.72 natpmanksaysja jhal acaḥ and 7.2.101 jarjayā jaras anytarasyāyām. Now the question arises whether we should apply 7.1.72 or 7.2.101. If one prefers to apply 7.1.72, the result will be *ajara + nUM + i. Applying 7.2.101 creates a different problem. This rule requires the replacing of jara by jaras provided the aṅga is followed by an affix beginning with aC. If one considers ajara as the aṅga, the n of nUM will intervene before the i, the affix beginning with aC. Thus 7.2.101 will be blocked from application. However, one can also argue that ajara + n should be treated as the aṅga since n happens to be part of it, that is, because jara is part of the aṅga and n is part of the aṅga (avayavāvayava). This reasoning will permit the application of 7.2.101 with the problematic result: *a (jara → jaras) + n + i → ajarasni + i = *ajaranai. The real problem with this approach, however, is the application of rule 6.4.10 sānta mahatab samyogasya which requires the lengthening of the penultimate vowel of the aṅga ending in s preceded by n. Given the string *ajaranai, the combination is not ns but sn which will not permit 6.4.10 to apply. Wrong form such as *ajaranai will result. Therefore, in order to facilitate the application of 6.4.10, 7.2.101 must replace jara by jaras before 7.1.72 introduces nUM. This is possible only when one invokes 1.4.2 vipratisedhe... The conflict between the application of rules 7.2.101 and 7.1.72 is that of asambhava and hence 7.1.72 may reapply, in view of paribhāṣā 104.

106. asiddham bahiranga mantarainge (51)

The mark for this paribhāṣā is antaraṅgatva ‘internal conditioning’. It is present in every situation where the cause or condition (aṅga) for applying a rule or performing an operation is internally conditioned. This paribhāṣā enables an internally conditioned rule or operation to render an externally conditioned rule or operation suspended (asiddha). It should be noted that the status of internal and external conditioning is determined on the basis of forms (śabda) and not meaning (artha). It should be noted further that this paribhāṣā applies only in the sapādasaptādhyāyī ‘the first seven books plus the first quarter of book eight’; it does not apply to rules within the last three quarters of book eight. Finally, this paribhāṣā applies in relation to both types of bhiranga operations: jātabahiranga and samakālīkabahiranga. In other words, an internally conditioned rule or operation suspends an externally conditioned operation whether the externally conditioned operation has already taken place or is about to occur.

Since this paribhāṣā depends on the relative internal and external conditioning of causes with reference to a form, it clearly requires a string of formal elements as locus. Let us consider the derivation of sūna ‘sun, ray of light’ which serves as the most celebrated example for this paribhāṣā in the
commentaries. This word is derived by introducing Unādi affix na after the verbal root siv 'to sew'. Furthermore, there is also a provision in Unādi 3.9 siveṣṭer yū ca whereby the iv of siv is replaced by yū. Thus, we get s (iv → yū) + na = syūna. However, since Unādi affixes apply variously — sometimes they do apply and sometimes they don’t — commentators claim that, in the derivation of syona, na alone should be introduced. The concurrent replacement of iv by yū should not apply. This will yield the string siv + na to which 6.4.19 echmoḥ śūḍ anunāsike applies to yield si (v → ū) + na = siū + na. Rules 6.1.77 iko yaṇ aṣī and 7.3.86 pugantalaghūpadhasya ca now become applicable to siū + na. Rule 7.3.86 will require that i of siū be replaced by the guṇa vowel e under the condition of siū being an aṅga before affix na. Thus, na conditions this guṇa replacement. Rule 6.1.77 would require that the i of siū + na be replaced by y before ū. The guṇa operation is bahiraṅga; its cause, the affix na, is external. However, the cause of the y replacement, ū, is internal, within siū. According to this paribhāṣā, the internally conditioned y replacement will take place. This will yield s (i → y)ū + na = syū + na. The final ū of syū will then be replaced by o to yield syona (cf. 7.3.84 sārvadhatukārdhadhatukayoḥ).

Cardona (unpublished (b)) approaches this paribhāṣā with a much deeper and wider orientation. Here are three examples from the Mahābhāṣya which Cardona also discusses.

(1) śuśuvuh 'they swelled' is derived from śuī + LIṬ where us is a replacement of jhi (3.4.77 tiptas... and 3.4.81 liṭh...). Given the string svi + us, rule 6.1.30 vibhāṣā śveḥ optionally applies to yield s(v → u)i + us. Two rules now become applicable: 6.1.108 samprasāraṇaṇa ca and 6.4.82 er anekāco samyogopūrvau ca. The first rule requires that the sequence of a samprasāraṇa vowel followed by another vowel, i.e. u + i, of suī + us, be replaced by u. This will produce the string s(u + i → u) + us = su + us. Rule 6.4.82 requires that the i of suī be replaced by y. This y replacement is bahiraṅga in the sense that its condition, u, is contained in us and not in suī. As opposed to this, the single replacement u has its condition internally. The samprasāraṇa vowel u which forms the condition for the replacement is contained within suī. Consequently, the internally conditioned replacement by u prevails. The externally conditioned application would have resulted in the derivation of a wrong form *suy + us.

(2) juhuwuh 'they called' is derived from hvā + us where after the samprasāraṇa, the string becomes h(v → u)ā + us → hvā + us. Here again, two rules become applicable: 6.4.64 āto lopa iti ca and 6.1.108 samprasāraṇaṇa ca. Rule 6.4.64 requires that the final ā of hvā be dropped before the affix us. This zero replacement of ā clearly is externally conditioned. As a result, 6.1.108 applies to yield h(uā → u) + us = hu + us.

(3) dhiyati 'he holds or maintains...' is derived from dhi + Ša + ti = dhi + a + ti where two rules become applicable: 6.4.77 aci śnudhātubhrāvām
Some Additional Paribhāṣās

...yovriyaṁvaṇau and 7.3.86 pugantalaghūpadhasya ca. The application of 6.4.77 would yield the form dh(i → iy) + a + ti where the root final i is replaced by iy under the condition of the following a. Applying the second rule would result in dh(i → e) + a + ti where the condition of application will be ti which is external. Since the condition for the application of 6.4.77, the following a, is internal, 6.4.77 is applied. Rule 7.3.86 would have yielded the wrong form dh(i → e → ay) + a + ti = *dhayati.

107. purastāpavādā anantarān vidhīn bādhante nottarān (60)

This paribhāṣā states that a prior exception blocks only the most immediately following rule and not any later rules. An exception rule may be either niravakāsāpavāda, a rule which is left without any scope of application unless it blocks a rule or viśeṣāpavāda, a rule which carves out its scope of application within the scope of a general rule. There is a basic difference between these two types. A niravakāśa exception blocks a general rule in the sense that it applies first. After its application, if the general rule still finds its scope, it too may apply. Thus niravakāśa rules entail temporary blocking. A viśeṣa exception, however, blocks the application of a general rule forever. The reason for this total and permanent blocking is that a particular (viśeṣa) rule carves out its domain from within the domain of a general (utsarga) rule. A viśeṣa rule only obtains within the domain of a general rule. Its validity is based entirely on blocking the general rule. Thus, the general rule, is blocked forever by the particular exception.

Commentators cite two maxim in connection with blocking of utsarga by viśeṣa. The first maxim was evolved by the grammarians themselves. It states that y blocks x if y obtains only after x has obtained (yenā’ prāpte yo vidhir ārabhyate sa tasya bādhako bhavati). The other maxim derives from common practice. It is called takra-kaunḍinya nyāya. When someone commands someone else by brāhmaṇebhya addhi diyatāṃ takram kaunḍinyāya ‘give addhi (yoghurt) to the brāhmaṇas and takra (buttermilk) to Kaunḍinya’, one understands that dadhidāna ‘the giving of yoghurt’ is a general operation in relation to which takradāna ‘the giving of buttermilk’ is particular. However Kaunḍinya, who is supposed to receive buttermilk, is also a brāhmaṇa. Thus, takradāna (y) obtains within the scope of dadhidāna (x). By being a brāhmaṇa, Kaunḍinya is entitled to receive the general dadhidāna. However, by reason of being Kaunḍinya, a particular brāhmaṇa, he is only entitled to receive takra. If he receives takra and then is given dadhi, this particular injunction will become meaningless. As a result, takradāna will block dadhidāna permanently.

Let us look at an example. Consider 6.1.1 ekācō deve prathamasya and 6.1.2 ajāder dvitiyasya. The first rule requires that the unit formed with the first vowel of a rule be doubled. This is a general rule to which 6.1.2 is an exception. Rule 6.1.2 requires that if the root begins with a vowel, the unit formed
by its second vowel be doubled. Rule 6.1.1 obtains on roots in general whereas 6.1.2 obtains on a particular set of roots. Rule 6.1.2 thus carves out its domain from within the general domain of 6.1.1. Consequently, 6.1.2 will block 6.1.1 permanently.

Now let us consider a niravakāśa exception. Given the string ramā + ṇī where ramā terminates in the feminine affix āP and ṇī is locative singular, two rules apply. Rule 7.3.116 ṇer āṁ nadyāṁ nīyāḥ requires that ṇī be replaced by āṁ. Rule 7.3.113 yād āpah requires that ṇī should receive the augment yāT. Rule 7.1.113 will yield the string ramā + yā + ṇī. This will make the application of 7.3.116 impossible because the locus of replacement by āṁ is no longer ṇī. Instead, it is yāTṇī. Rule 7.3.116 will be without any scope of application. It is for this reason that 7.3.116 blocks 7.3.113 and the result is ramā + āṁ. However, as stated above, a niravakāśa exception blocks a general rule only temporarily and should there be a situation under which the general rule may apply, it may do so. Rule 7.3.113 does apply to introduce yāT after 7.3.116 has applied. In this case, āṁ is treated as though it were ṇī. Thus 7.3.116 does not permanently block 7.3.113.

108. madhye' pavādāḥ pūrvān vidhīn bādhante nottarān (61)

An exception read in between rules blocks only the provision of a prior rule. Consider the following rules: 4.1.54 svaṁgac copasarjanād asamyogopadhāt, 4.1.55 nāśkodarosthajaṁghādantakarnasṛṅgac ca, 4.1.56 na kroḍādi bahvacah and 4.1.57 sahaṁavidyamānāpūrvāc ca. Rule 4.1.54 is a general rule. It states that a feminine affix Niṣ optionally may be introduced after a nominal stem which (a) ends in a, (b) is termed an upasarjana 'secondary constituent of a compound', (c) does not have a conjunct in the upadhā 'penultimate position'; and (d) has svaṁga 'one's own limb' as its denotatum. Rule 4.1.55 cites specific stems such as nāśikā 'nose', udara 'belly', oṣṭha 'lips', jaṅghā 'thigh', danta 'tooth', karṇa 'ear' and śṛṅga 'horn' after which Niṣ may be introduced. Note here that this list contains items such as danta, karṇa, jaṅghā and śṛṅga which contain penultimate conjuncts. Furthermore, condition (a) of 4.1.54 is dropped in case of 4.1.55. Thus, 4.1.55 is an exception to conditions (a) and (c) of 4.1.54.

Now consider rules 4.1.56 and 4.1.57. These are negation rules. The first rule negates an optional Niṣ when the stem either belongs to the list headed by kroḍa 'lap' or contains more than two vowels and ends in a. Note in this connection that 4.1.55 contains items such as udara which would not be permitted to take the optional Niṣ under 4.1.56. Rule 4.1.57 negates Niṣ when saha 'with' or naN 'not' form the initial constituent of the stem. Patanjali discusses the negations provided by 4.1.56-57 under rule 4.1.55. Two types of items are given there: polysyllabic items such as udara and those with a conjunct in the upadhā such as danta. The negation given by
4.1.56-57 also is twofold: one marked by polysyllables and the other marked with saha and naN. Rule 4.1.55 will be able to block the polysyllabic negation in case of items such as udara or nāsikā, but it cannot block the negation of saha and naN offered by 4.1.57. This will be made possible by treating 4.1.55 as the prior exception to 4.1.56 and accordingly, the prior exception 4.1.55, can block only the most immediately available rule, 4.1.56. Thus we will get examples such as tilodarā (TāP) / tilodarē (NiS) 'she on whose abdomen are marks like sesame'. Since 4.1.55 cannot block the negation of 4.1.57, however, we get only anāsikā (TāP) 'she who does not have a nose' and not *anāsikī (NiS).

Let us now consider examples of 4.1.55 which contain conjuncts. As above, we again find two negations: one marked with a conjunct in upadhā, the other with saha or naN. Rule 4.1.56 is an exception placed in the middle. As such according to paribhāsā 108, it can block only the provision of 4.1.55 but not of 4.1.57. Consider two examples: cārukanī and cārukanā 'she who has beautiful ears'. Rule 4.1.54 does not allow NiS to items having a penultimate conjunct. Rule 4.1.55 blocks this exception and optionally provides for NiS. However, since 4.1.56 is an exception placed in the middle, it cannot block the negation marked with saha or naN. This is the reason why in an example like vidyāmānandantā 'she whose teeth are intact', the negation provided by 4.1.57 prevails and the optional NiS of 4.1.55 is blocked. Had this not been the case *vidyāmānandantī, a wrong form, would have resulted.

109. anantarasya vidhir bhavati pratiṣedho vā (62)

When a rule makes or negates a provision, its provision or negation relates to that which is most immediate. Consider the following rules. 3.4.87 ser hy api ca orders a hi replacement of a siP replacement of LOT which is to be treated as apiṭ, not marked with P and 3.4.88 vai c chandasi orders a hi replacement of siP which, in turn, is a replacement of LOT and optionally is treated as apiṭ. Rule 3.4.87 provides for two things: hi as a replacement of siP and hi to be treated as apiṭ. Without this second provision, hi, since it is a replacement of siP, an item marked with P, would have been treated as though marked by P itself (1.1.56 sthāṇivad...). The question is whether 3.4.88 makes both provisions of 3.4.87 optional or only one. Are the hi replacement and its apiṭ status both optional or only the apiṭ status? According to paribhāsā 108, hi is not optional because apiṭ is the most immediate provision available to 3.4.88.

Consider the negation provided by 7.2.4 neṭi. This rule negates the provision of vrddhi of an aṅga (1.4.13 yasmat...) which is either constituted by vada 'to speak', vraga 'to wander', or terminates in a consonant. The right context for this vrddhi is the parasmaipada affix siC. Thus we get examples such as avrājīt 'he wandered away' and avādīt 'he spoke'. Rule 7.2.4 does not allow vrddhi for those aṅgas which terminate in a consonant where the
right context is $ṣIČ$ with initial augment $iT$. Thus, there is no $vrddhi$ in $amoṣit$ 'he stole' or $asevit$ 'he served'. Both rules 7.2.1 $sici vrddhiḥ paras-
maipadesu$ and 7.2.114 $mrj vrddhiḥ$ also provide for $vrddhi$. Rule 7.2.4 can
only negate the $vrddhi$ provision with reference to 7.2.3. It cannot negate
the provisions of 7.2.1 or 7.2.114 as these rules are not most immediate to
it. The commentators consider this $paribhāsa$ more powerful than 108.

110. $ubhayanirdese pañcamīnirdesō balīyaḥ (71)$

If there is a conflict between operations specified by $saptami$ 'locative'
and $pañcamī$ 'ablative', the one specified by $pañcamī$ prevails. Consider the
interpretation of rule 8.3.32 $nāmo hrasvād aci $nāmuḥ nityam$ where $namah$ is
in the ablative and $aci$ in the locative. This rule introduces augments $nUṬ$, $nUṬ$, and $nUṬ$ to items specified by $pañcamī$ and $saptami$. If one takes
the locative interpretation, then, in view of 1.1.66 $tasmīn iti...$, the aug-
ments will be introduced to that $nAM (i, n, n,)$ which is immediately
followed by $aC$. 'According to the ablative interpretation, however, the
augments will be introduced to the $aC$ which comes immediately after
(1.1.67 $tasmād ity uttarasya$) the $nAM$. Consider $kurvan āste$ 'he is engaged in
doing or making', where $kurvan$ is a $pada$ ending in $n$ which, in turn, occurs
before the $ā$ of $āste$. Furthermore, the $n$ of $kurvan$ occurs after a short $a$
(hrasvāt). According to the locative interpretation, $n (nUṬ)$ will be intro-
duced to the $n$ of $kurvan$. This will yield $kurva + n + n + āste = kurvann āste$.
An ablative interpretation will introduce the $n$ to the $ā$ of $āste$ with the
result being $kurvan + nāste$.

However, a problem still remains with the locative interpretation. Rule
8.4.37 $padāntasya$ negates the replacement of the final $n$ of a $pada$ by $n$. If
the $n$ of 8.2.32 is introduced to $kurvan$, its final $n$ cannot be saved from
being replaced by $n$. Rule 8.4.37 cannot block this replacement. If, how-
ever, the $n$ is introduced to $ā$, $kurvan$ can save its $n$ from being replaced by
$n$. For this reason, the ablative interpretation prevails.

The locative of $aci$ also is intended for the subsequent rule 8.2.33 $may$
$uño vo vā. In the absence of an ablative interpretation, the ablative of
$namah$ will be without scope (niravakāśa). This niravakāśatva favours the
ablative interpretation. However, consider rule 8.2.29 $nāḥ si dhūt$ where
$nāḥ$ (ablative) and $si$ (locative) both will be without any scope elsewhere.
Here again, the ablative interpretation will prevail, although for a differ-
ent reason. Rule 1.1.67 $tasmād...$ is subsequent to 1.1.66 $tasmīn...$ and
hence, according to 1.4.2 $vipratīṣedhe...$, the subsequent rule will prevail.

What if both the locative and ablative used in a rule find their scope
elsewhere? Such an example is 7.1.52 āmi sarvanāmnaḥ $sū$ where $āt$ (abla-
tive) has its scope in 7.1.50 $āj jaser suk$ from whence it is carried and āmi has
its scope in 7.1.53 $tres trayāḥ$. Here again 1.4.2 will be invoked and an abla-
tive interpretation will prevail.
111. sūtre lingavacanam atantram (74)

Gender and number specific to a rule should not be treated as absolute. When Pāṇini uses a particular item in a particular gender and number, the reference of that item should not be treated as limited to that particular number and gender. Consider 4.1.92 tasyāpatyam where tasya is singular and apatyam is neuter. Since apatyam is neuter, if one applies 4.1.105 gargādibhyo yaṁ which carries the anuvṛtti of 4.1.92, one would only get *gārgyaṁ ‘offspring of Garga’ and not gārgyaḥ ‘male offspring of Garga’. The masculine gārgyaḥ would be ruled out. Similarly, on the basis of a singular in tasya, one could not get the dual gārgyau. Paribhāṣā 110 legitimizes these other forms. As a result, tasya does not just refer to the singular and apatyam is not strictly limited to neuter.

The existence of this paribhāṣā is indicated by rules 2.2.2 ardhāṃ napumṣakam and 1.4.1 ā kaḍārād ekā samyñā. In 2.2.2, if Pāṇini had intended only the neuter gender, he need not have explicitly used napumṣakam. The neuter idea would have been carried by ardham itself. Hence, on the strength of the explicit use of napumṣakam one concludes that a gender in a rule does not become absolute. Similarly, the explicit mention of ekā in 1.4.1 indicates that number is also not absolute. The singular, if it had been intended to be absolute, automatically could have been conveyed by the use in the singular of pada, bha and anīga terms.

112. samniyogaśiṣṭānāṁ antarāpāye ubhayor apy apāyāḥ (112)

Whenever a rule introduces two things concurrently, if one is removed then the other also is removed. Recall the derivation of pañcendraḥ ‘a mantra whose deities are five Indrāniś’ where pañcān + Jas and indrānī + Jas are combined in a dvīgu compound by rule 2.1.51 taddhitārthottara.... The compound pañcendrāṇī results from the deletion of the Jas and n of pañcān and the replacement of the a of pañca and the i of indrāni with a single guṇa substitute. After pañcendrāṇī, rule 4.2.24 sāṣya devatā introduces anī which later is deleted by 4.1.88 dvīgor lug anapātye. Then rule 1.2.49 luk taddhita luki demanding the deletion of the feminine affix NīP occurring after indrāṇī is applied. This affix was introduced after indra by rule 4.1.49 indravaruṇa.... In addition, this same rule concurrently introduced the augment ānUK to indra. Since ānUK is marked with K, it is introduced at the end of indra (cf. 1.1.46 adyantau ākītau). Thus, we find indra + ānUK + NīP = indra + ān + i = indrāṇī.

When rule 1.2.49 applies deleting the NīP of pañcendrāṇī paribhāṣā 112 intervenes as NīP and ānUK were introduced concurrently. As a result, when NīP is deleted, ānUK must also be deleted. Thus, pañcendrān(an → 0)(i → 0) = pañcendra. Note that the final a of indra was there when ānUK and NīP were introduced; therefore, it will be restored when they are removed.
113. *tanmadhyapatitas tadgrahaṇena gṛhyate* (96)

A given form can also represent its derivates provided that what is introduced in the derivation is contained within that form. For example, forms such as *sarvaka* ‘all, entire’, and *uccakaiḥ* ‘high’ are derived by introducing an affix *akĀC* after *sarva*, a pronoun, and *uccaiḥ*, an indeclinable (5.3.71 *avyayasarvanāmānām akac prāk teḥ*). This affix is introduced before the *ti* (1.1.64 *aco’ ntyādi ti*; that part of an item beginning with its last vowel) of an item. Consequently, *sarv + akĀC + a = sarvaka* and *ucc + akĀC + aih = uccakaiḥ.*

Now, consider rules 1.1.27 *sarvādini sarvanāmāni,* and 1.1.37 *svarādinīpātam avyayam,* which defines the term *avyaya.* Rule 1.1.27 assigns the term *sarvanāman* to those forms enumerated in the list headed by *sarva* ‘all’. Similarly, 1.1.37 assigns the term *avyaya* to those forms which are either enumerated in the list headed by *svar* ‘heaven’ or are termed *nipāta.* Since *sarvaka* and *uccakaiḥ* are items which are not covered by the scope of rules 1.1.27 and 1.1.43, *sarvaka* cannot be assigned the term *sarvanāman* and *uccakaiḥ* cannot be called an *avyaya.* However, in the absence of the assignments of these terms, operations specific to *sarvanāman* and *avyaya* cannot be performed. For example, *sarvake,* the nominative plural of *sarvaka,* as well as *sarvakasmai* and *sarvakasmāt,* the dative and ablative singulars, cannot be derived in a manner parallel to the derivation of *sarve,* *sarvasmai,* and *sarvasmāt.* Similarly, a *sU P* introduced after *uccakaiḥ* cannot be deleted in the absence of the assignment of the term *avyaya.*

It is to remove these difficulties that this *paribhāsā* enables *sarva* and *uccaiḥ* to represent *sarvaka* and *uccakaiḥ* as well, on the grounds that *akĀC* is contained within *sarva* and *uccaiḥ.*

114. *upapadavibhaktē karaṇavibhaktīr balīyasī* (103)

A nominal ending specified with reference to a *kāraka* is more powerful than one specified with reference to an *upapada* ‘co-occurring *pada*’. Consider rules 2.3.2 *karmapravacanīya-yukte dvitiyā* and 2.28.28 *apādāne paṅcamī.* Rule 2.3.2 introduces *dvitiyā* ‘accusative singular’ after a nominal stem co-occurring with an item termed *karmapravacanīya.* Rule 2.3.28 introduces *paṅcamī* ‘ablative singular’ after a nominal stem when the ablative (apādāna) is to be denoted. Now consider the sentence *kuto* *dhyāgacchai* ‘where is he coming from’ where *kutaḥ* is in the ablative. By 1.4.93 *adhīparī anartha-kau, adhi* of *dhyāgacchai* may be termed a *karmapravacanīya.* Since *kim* of *kutaḥ* co-occurs with *adhi,* a *karmapravacanīya,* according to rule 2.3.2, *kim* should take *dvitiyā,* the accusative. Instead, since this *paribhāsā* favours a nominal ending specific to a *kāraka* rather than one which is specific to a co-occurring item, *kim* is introduced with *paṅcamī* by rule 2.3.28.
The following is a controlled listing of the domain of Pāṇini’s kārakas.

1.4.1 ā kadārād ekā samjñā  
‘only one term is to be assigned prior to kadāra (2.3.38 kadārah karmadhāryaye)’

1.4.2 vipratisedhe param kāryam  
‘the subsequent (para) is to be applied when there is conflict between two rules of equal strength’

1.4.23 kārake  
‘the kāraka...’

1.4.24 dhruvam apanye pādanam  
‘a kāraka which is fixed (dhruva) when movement away (apāya) is denoted is termed apādāna (ablative)’

1.4.32 karmanā yam abhipratai sa sampradānam  
‘a kāraka which the agent wishes to reach through the object is termed sampradāna (dative)’

1.4.42 sādhakatamaṁ karaṇam  
‘a kāraka which is most instrumental in bringing an action to accomplishment is termed karaṇa (instrument)’

1.4.44 ādhāro dhikaraṇam  
‘a kāraka which serves as locus (ādhāra) is termed adhikaraṇa’

1.4.49 kartur ṛṣita-tamaṁ karma  
‘a kāraka which the agent (karti) wishes the most is termed karman’

1.4.54 svatantraṁ kartā  
‘a kāraka which is independent (svatantra) is termed kartṛ’

The six kārakas, i.e. apādāna, sampradāna, karaṇa, adhikaraṇa, karman and kartṛ, have been discussed under rule 1.4.23 kārake. This rule has received different interpretations because (a) it is an adhikāra, (b) Pāṇini puts kārake in the locative (saptami) and (c) kāraka is a technical term (samjñā). There are three possible interpretations of this rule:

(a) kārake is an adhikāra whereby the technical term kāraka is introduced,
(b) kārake states a meaning condition, and
(c) kārake serves as a qualifier (viśeṣana) to the domain of the terms apādāna, etc.

Commentators have evaluated these interpretations in light of the following considerations.
(a) kāraka is a technical term which, according to its etymological meaning, denotes a thing which brings about an action, (b) the term kāraka should denote only the six categories of apādāna, etc., and (c) each of the six kāraka categories must also be assigned the term kāraka. Fact (a) establishes a necessary connection between kāraka and kriyā 'action'. Fact (b) restricts the number of things to which the term kāraka may be assigned. Fact (c) requires that a thing which serves as apādāna must also serve as a kāraka. These three facts are interrelated.

Returning to the three interpretations of 1.4.23, we find that the Kāśikāvṛtti seems to be following the second, i.e., the meaning condition view. This interpretation is motivated by the fact that Pāṇini puts kāraka in the locative. The Kāśikā seems to interpret the word kāraka as kriyā. However, the Kāśikā's interpretation, and its vṛttī on subsequent rules, is confusing. Consider, for example, its vṛttī on rule 1.4.24 dhruvam apāye pādānam: 1

 dhruvam (yad apāyayuktam) apāye sādhye (yad avadhibhūtam tāt kārakaṃ) apādānasamjñānām bhavati

If one follows the 'meaning condition' view, and accordingly interprets kāraka as denoting kriyā, the above vṛttī should be rephrased, without that which I have enclosed in parentheses, as follows:

 dhruvam apāye sādhye apādānasamjñānām bhavati
‘a thing which is dhruva ‘fixed’ when apāya ‘movement away’ is to be accomplished is assigned the name apādāna (ablative)’

This interpretation obviously will run into problems. For example, in sentences such as grāmasya samipād āgacchati 'he is coming from the vicinity of the village', and vṛksasya parṇāni patanti ‘leaves of the tree are falling’, both grāma ‘village’ and vṛksa ‘tree’ will qualify for the assignment of the term apādāna. To overcome these difficulties, Kāśikā includes the word apāyayuktam in the vṛttī to imply that apāya, being a relative notion, entails samśleṣa ‘conjunction’. This will rule out the assignment of the term apādāna to grāma in sentence (1) as it is the vicinity of the village and not the village itself which is in conjunction with the reference to movement away. 2 However, the difficulty mentioned in connection with the second sentence still remains. One may resort to vīvakṣā ‘intent to speak,’ as has been advocated by the Mahābhāṣya, 3 and state that in the second sentence the speaker does not wish to speak about vṛksa as apādāna. This will

1 Kāś. I: 535.
2 see also Mbh. I, 241: nātra grāmo' pāyayuktah. kim tarhi? samipam. yadda ca grāmo' pāyayukto bhavati tadā pādānasamjñā.
3 Ibid.: na vā esa doṣah. kim kāraṇam? apāyasyāvīvakṣīatvāt nātṛpāyo vīvakṣitah...
remove the difficulty concerning *vrkṣa* being assigned the term *apādāna*; still, *apāyayuktam* is used in the *vyrtī* as part of a relative construction with *yad...tad*. Furthermore, there is syntactic coordination between *kārakam* and *apādānasamjñām* which, for all practical purposes, amounts to calling *apādāna* a *kāraka*. This will run counter to the ‘meaning condition view’ and favour the technical term (*samjñā*) view of the first interpretation.

Both the ‘technical term’ and the ‘qualifier’ views have been discussed in the *Mahābhāṣya* where, according to the first interpretation, *kāraka* becomes a technical term introduced by 1.4.23 as an *adhikāra*. Many arguments have been raised against this interpretation. Why didn’t Pāṇini put *kāraka* in the nominative as is his practice elsewhere? If *kāraka* is a technical term, why didn’t Pāṇini define it? There is no satisfactory explanation for the locative of *kāraka* unless one abandons the *samjñā* view. Patañjali, however, is not bothered by the locative. He argues that since this is the domain of *ekasamjñā* ‘one term’, *kāraka* cannot be anything but a *samjñā* which, perhaps, Pāṇini chose not to define since it already was a fairly well-known term. Besides, *kāraka*, being a derivative with *NouL*, can be used as an *anvarthasamjñā*, a technical term denoting its etymological meaning.

There are yet other problems with the *samjñā* view. For one thing, the term *kāraka* is introduced as a term in the domain of *ekasamjñā*. Since a thing which is termed *apādāna* should also be termed *kāraka*, a situation of *samjñāsamāvesa* ‘class-inclusion’ arises which goes directly against the *ekasamjñā* requirement. To remove this difficulty, rule splitting (yogavibhāga) is invoked according to which individual rules will be split in two with *kāraka* carried via *anuvṛtī*. Thus, 1.4.24 *dhruvam apāye* ’pādānam will be interpreted as follows.

(a) *apāye dhruvam kārakasamjñām bhavati*

‘a thing which is fixed when movement away is denoted is termed *kāraka*’

(b) *apāye dhruvam kārakam apādānasamjñām bhavati*

‘a *kāraka* which is fixed when movement away is denoted is termed *apādāna*’

Obviously, resorting to *yogavibhāga* will be prolix (gaurava). In addition, *kāraka* will be accepted as a term defined on the basis of its etymological meaning. But since *kāraka* is derived by introducing *NouL* denoting *karty*,

4 *Mbh. I, 299-40: kim idam ‘kārake’ iti? samjñānirdeśaḥ... kāraka iti samjñānirdeśaḥ cet samjñino* *pi nirdesah kartavyah. samjñādhikāraś ceyam. tatra kim anyac chakyaṃ vijnātām anyay adat atah samjñāyāḥ....

5 *Mbh. I, 342: tatra mahatyāḥ samjñāyāḥ karaṇe etat prayojanam anvarthasamjñā yathā vijnāyeta ‘karotītī kārakam.’

6 *PM ad Kāś. I, 531: ucata samjñāpakaśe- apāye yad dhruvam tat kārakasamjñām bhavati, apādānasamjñām cety ayaṃ artho bhavati, evam anyatāpi...
kāraka will refer to a thing which is the doer. Since all the other kārakas are also participants in an action and since they also are all termed kāraka, they all will be treated as kartṛ. This being the case, Pāṇini did not have to define the term kartṛ by rule 1.4.54 svatantrāḥ kartṭā. Kāraka and kartṛ will become synonymous. Further proposals have been made in the Mahābhāṣya⁷ to resolve this difficulty. An action may be viewed as a composite of several actions. For example, the action of cooking denoted by verbal root pac underlies such actions as arranging the fire with the firewood, putting the pot on the stove, placing the rice in it, stirring the rice and finally softening (viklitti) it.⁸

A kāraka can be viewed as svatantrakartṛ ‘independent agent’ with reference to its own action. It can be termed apādāna, etc., with reference to the principal action. Thus, a pot (sthāli) because of its capacity to contain rice on a stove, can be viewed as kartṛ. When a speaker wishes to highlight his status of the pot, he uses it as the kartṛ. Of course, then the principal agent, such as Devadatta of

(1) devadattāḥ sthālyāṃ odanaṃ pacati
‘Devadatta is cooking the rice in the pot’, is not used. As a result, we get

(2) sthāli pacati
‘the pot is cooking’. This explanation, however, also runs into difficulty, since, of six kārakas, only karman, karna and adhikaraṇa can be seen as kartṛ. Should we accept vivakṣā as reason for the lack of kartṛ status for apādāna and samprādāna? The answer seems to be in the affirmative.

We shall now return to the third, the qualifier view. According to this view, kārake is treated as an adhikāra to restrict the application of the word kāraka only to the six categories of apādāna, samprādāna, karaṇa, adhikaraṇa, karman and kartṛ. The locative will then be interpreted as that of specification (nirdhāraṇa). However, since the question of nirdhāraṇa arises only when one has to specify a single entity from among many, the singular in kārake should be treated as denoting jāti ‘class’. Thus, kārake will be equivalent to kārakesu ‘among the kārakas’.⁹ Rule 1.4.24 will then be interpreted as follows.

kārake (ṣu madhye) yad dhruvaṃ kārakaṃ tad apādānasamyjuṃ bhavaty apāye sādhya
‘a kāraka which is dhruva when movement away is to be accomplished is termed apādāna’

This interpretation still subscribes to the idea that kāraka denotes its

⁷ Mbh. I, 242-43: ...pratikārakaṃ kriyābhedāt. pacādīnām hi pratikārakaṃ kriyā bhidyate...
⁸ Ibid.: adhīrārayoḷokāśeṣaḥ ca mahāsāṃkṣepyaḥ bhārataḥ pārtha uṣṭi, eva devadattaḥ pacātītī ucītāḥ. tatra tadā pācī vartate...
⁹ PM ad Kāś. I, 531: viśeṣaṇādhikāre tu- kārakesu madhye yad apāye dhruvaṃ kārakaṃ ity artho labhyate, nirdhāraṇasya sajātiyavishayatvād iti...
etymological meaning, kartr. It is suggested that this difficulty can be removed by treating an action as a composite of several actions. Most of the interpretation problems entailed by 1.4.23 stem from the locative in kāraka. The qualifier interpretation is preferable because it does not propose to interpret locative as nominative, nor does it resort to rule-splitting (yogavibhāga).

Questions have been raised concerning whether a kāraka is a thing and whether or not the different kārakas are one and the same. A kāraka may be a thing but a thing is not always a kāraka. What makes a thing a kāraka is the power (śakti) of bringing an action towards completion. This power does not inhere in things. Instead, they can serve as substratum for it. When a thing serves as the substratum for power, the thing is a kāraka. Since all kārakas serve as means towards completing an action and all share the same power served by things as their substratum, all kārakas are the same. However, differences among the kārakas are maintained. A difference is to be maintained between the agent (kartr) and the other kārakas because it is the kartr which brings other kārakas into play. The power to act as kartr comes to the agent prior to all the other kārakas. Since every action is looked upon as a composite of several subordinate actions, kārakas of these subordinate actions can be treated as kartr. They are not independent with regard to the main action. However, in regard to their subordinate actions, they are independent. The kāraka also may be viewed differently depending upon vivakṣā ‘intent of the speaker’. Thus, what is looked upon as object (karman) can be looked upon as kartr if the speaker wishes to speak about it as such. A grammarian would rather view the kārakas as one and the same, but he is forced to view them as distinct since he believes in the authority (prāmāṇya) of words (śabda) and words are determined by usage and usage follows the realities of the outside world (loka). Thus, the grammarian has to follow the practice in the outside world where people do view the kārakas as different. Hence the grammarian views them as different. Related to this aspect of the kāraka is the question whether things which serve as kārakas must be animate. A kāraka, in view of the traditional grammarians, does not necessarily have to be animate.

Pāṇini constrains the rules of the kāraka domain by rules 1.4.1 ā kaḍārād ekā samjña and 1.4.2 vi prátiśedhe parām kāryam. These rules state that only one term per nominatum (samjñān) should be assigned. A conflict between two terms is to be resolved in favour of the term introduced by the subsequent rule. It should be noted here that resolving conflicts between two terms is not solely the function of rule 1.4.2. Indeed, some conflicts related

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10 see above fn. 7.
11 VP. III:140: prāg anyataḥ śaktilabhān nyagbhāvāpādanād api; tadbhinapravṛttītvāt pravṛttānām nivartanāt.
to the assignment of terms from this ekasamjñā domain cannot be solved by 1.4.2. This rule resolves conflicts only between two terms which are both sāvakāśa ‘with scope of application’.\footnote{Mbh. I, 204: dvau prasaṅgau yadānyārthau bhavata ekasmimśca yugapat prāpnumaḥ...} Conflicts between two terms of this domain where one term is sāvakāśa and the other niravakāśa ‘without any scope of application elsewhere’ are resolved on the basis of niravakāśatva under the requirement of 1.4.1 ā kadārāḥ...

Consider the following examples.

(3) krūrāya krudhyati
   ‘... is angry with the cruel one’
(4) krūram ahikrudhyati
   ‘id’
(5) geham praviṣati
   ‘... is entering the house’
(6) *gehe praviṣati
   ‘id.’

Krūra ‘cruel’ in (3) is used with caturthi ‘fourth triplet of nominal ending’ to express sampradāna (2.3.13 caturthi sampradāne), but, in (4) it is used with dvitiyā ‘second triplet of nominal ending’ to express karman (2.3.2 karmanī dvitiyā). Krūra in (3) is assigned sampradāna since it is identified as one towards whom anger is directed (1.4.37 krudha...yaṃ prati kopah). It is assigned karman in (4) because there krudh ‘to be angry’ is used with the preverb abhi (1.4.38 krudhadruhor upasṛṣṭayoh karma). Now, 1.4.37 is sāvakāśa as it may apply to sentences where krudh is used without a preverb, but, 1.4.38 will be redundant if it does not apply in situations where krudh is used with a preverb. Nothing in 1.4.37 restrains its application to krūra because of 1.4.38 being vacuous (vyarthā). As a consequence, 1.4.38 blocks 1.4.37 and assigns karman uniquely to krūra. Remember that this conflict, because of the niravakāśatva of 1.4.38, cannot be resolved on the paratva basis mentioned in 1.4.2.

Sentences (5) and (6) illustrate a conflict between two terms, adhikāraṇa and karman, resolved on the basis of paratva and sāvakāśatva. These sentences use geha ‘house’ in dvitiyā and saptami ‘seventh triplet of nominal ending’ (2.3.36 saptamī adhikaraṇe...) respectively to express karman (1.4.46 adhisīnsthāsāṃ karma) and adhikāraṇa (1.4.44 ādhāro dhiṣṭaṇam). Sentence (6) is ungrammatical because geha cannot be termed locus (adhikaraṇa) and hence, saptami cannot be introduced to express it. This does not mean that a conflict between rules 1.4.44 and 1.4.46 does not arise. Both karman and adhikāraṇa are terms which are sāvakāśa elsewhere. They are equally applicable to geha in (5). Rule 1.4.2 is invoked to resolve the conflict in favour of karman introduced by Rule 1.4.46 which is subsequent to 1.4.44.
Since Pāṇini resolves certain conflicts involving the kāraka terms on the basis of paratvā, the ordering of rules which enumerate them is important. The notion of paratvā requires that the kāraka rules be arranged in a sequence most conducive to resolving conflicts. Pāṇini enumerates the six kāraka terms in the order of āpādāna, sampradāna, karana, adhikarana, karman and kārtya. One can assume that kārtya will prevail in conflicts over the assignment of the other kāraka terms. Similarly, karman will prevail over all the other kārakas besides kārtya. The relative strength of the other kārakas can also be determined. However, one should not overplay this relative strength as there may be conflicts entailing niravakāśatva which may also be resolved in favour of a rule which may not be subsequent.

Pāṇini specifies his kāraka categories based upon the principle of sāmānya ‘general’, viśeṣa ‘particular’ and seṣa ‘residual’. The six categories are identified by general rules formulated based upon linguistic generalizations. Particular rules form exceptions to them. Usage which cannot be accounted for by the above two rule types is governed by rules relegated to the residual category. It is obvious that these exceptions are necessary to capture the peculiarities of usage falling outside the scope of the general rules. One can also interpret it as Pāṇini’s desire not to class a certain thing x as belonging to the class y under the provision of a general rule z. In any case, Pāṇini’s formulation of particular rules constitutes an effort on his part to readjust his kāraka definitions.

It has already been stated that action (kriyā) denoted by means of verbal roots is central to the idea of kārakas which act as participants in bringing an action to accomplishment. It is only logical that readjustments be offered in view of the nature of both the action as well as its related participants. Since a general rule classes a kāraka category in view of generalization, readjustments must be offered relative to particulars. The following is a tabular listing of general kāraka rules followed by particular details concerning readjustments.

<table>
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<tr>
<th>sūtra</th>
<th>Participant</th>
<th>Action</th>
<th>Category</th>
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</thead>
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<tr>
<td>1.4.24 dhruvam apāye</td>
<td>dhruvam</td>
<td>apāya</td>
<td>āpādāna</td>
</tr>
<tr>
<td>1.4.25 bhītṛthānām bhayahetuh</td>
<td>bhayahetuh 'source of fear'</td>
<td>denoted by roots having the meaning of bhī 'to fear' and trā 'to protect'</td>
<td>—do—</td>
</tr>
<tr>
<td>1.4.26 parājera asodhah</td>
<td>asodhah</td>
<td>denoted by ji 'to win' used with the preverb parā</td>
<td>—do—</td>
</tr>
<tr>
<td></td>
<td>1</td>
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</tbody>
</table>
| 1.4.27 | vāraṇārthānām  
    ipsitāḥ | ipsitāḥ ‘desired’ | denoted by roots  
    meaning vāraṇā ‘to  
    ward off’ | apādāṇa                |
| 1.4.28 | antarddhau  
    yenādarśanam icchati | he by whom one  
    does not want to  
    be seen | antarddhi ‘hiding’ | —do—                  |
| 1.4.29 | ākhyātāpayage  
    akhyātā ‘relator’ | upayoga ‘regular  
    instruction’ | —do—                  |
| 1.4.30 | janikarttuh prakṛtih | karttuh prakṛtih ‘material cause of  
    the agent’ | jan ‘to be born’ | —do—                  |
| 1.4.31 | bhuvah prabhavaḥ | prabhavaḥ ‘place of  
    origin’ | denoted by bhū ‘to be,  
    become’ | —do—                  |
| 1.4.32 | karnāṇā yam abhiśpratī sa sam-  
    pradānam | he whom the  
    agent intends as  
    the goal | ...... | sampradāṇa            |
| 1.4.33 | rucyarthānām priyāmānāḥ | priyāmānāḥ ‘one  
    who is pleased’ | denoted by roots  
    meaning ruc ‘to please’ | —do—                  |
| 1.4.34 | śālghahnuṇi-  
    sthāṣapām jñāpyamānāḥ | jñāpyamānāḥ ‘one  
    who is informed’ | denoted by śālgh ‘to  
    praise’, ṭhun ‘to hide’,  
    sap ‘to swear’ | —do—                  |
| 1.4.35 | dhārēr uttamārṇāḥ | uttamārṇāḥ ‘creditor’ | denoted by dhārī ‘to  
    owe’ | —do—                  |
| 1.4.36 | sṛṣṭer ipsitāḥ | ipsitāḥ ‘desired’ | denoted by sṛṣṭi ‘to  
    yearn after’ | —do—                  |
| 1.4.37 | kruḍha-  
    druḥkṣayā-  
    rthānām yam prati  
    kopāḥ | yam prati kopāḥ ‘one  
    toward whom  
    anger is directed’ | denoted by kruḍh ‘to  
    be angry’, druḥ ‘to  
    wish harm to’, śrīyā  
    ‘not to tolerate’, and  
    asiṣyā ‘to find fault’ | —do—                  |
| 1.4.38 | kruḍhadrudhoro  
    upasṛṣṭayoh karma | —do— | denoted by kruḍh and  
    druḥ used with a  
    preverb | karmā            |
| 1.4.39 | rādhikṣyor yasya  
    vipraśnāḥ | yasya vipraśnāḥ ‘one about whom  
    inquiries are  
    made’ | denoted by rādhā ‘to  
    satisfy’ and  
    ikṣā ‘to look to’ | —do—                  |
| 1.4.40 | pratyānābhāyām  
    śrūvaḥ pūrvasya  
    karttā | pūrvasya karttā ‘agent of a prior  
    act of requesting’ | denoted by śru ‘to  
    hear’ used with the  
    preverb prati | —do—                  |
| 1.4.41 | anupratigrnast  
    ca | —do— | denoted by gr ‘to  
    chant’ used with anu  
    and prati | —do—                  |
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The Astādhyāyī of Pāṇini

A review of these tabular statements reveals some interesting facts. The six kāraka categories are defined in terms of generalized semantic equivalents. However, no one-to-one correspondence between the semantic equivalent and corresponding assignment of a kāraka term is acceptable. A kāraka is simply a participant in an action. The kāraka category to which a participant is assigned depends upon the nature of the action, the role this participant plays in that action and the manner in which the speaker wishes to speak about that role. A participant in an action is a kāraka with reference to that action. Generally one would expect that a category x would be assigned to a particular kāraka in accordance with the semantic equivalency, but this may not be the case. A kāraka may be viewed as belonging to category x in regards to semantic equivalency, yet it may be classed in category y. This amounts to saying that a kāraka refers to the category as classed and not a semantic equivalent.  

The following sentences illustrate these observations.

(7) himavato gaṅgā prabhavati (1.4.31)
    ‘the Gaṅgā originates in the Himālaya’

(8) *himavati gaṅgā prabhavati (1.4.45)

(9) yavebhyo gā vārayati (1.4.27)
    ‘...is warding cows off the barley’

(10) phalēbhyaḥ sprhayati (1.4.36)
    ‘...yearns for fruits’

(11) phāḷāṇi sprhayati (1.4.49)

(12) devadattāya ślāghate (1.4.34)
    ‘...is praising Devadatta’

(13) *devadattam ślāghate (1.4.49)

(14) krūrāya krudhyati (1.4.37)
    ‘is angry with the cruel one’

(15) krūram abhikrūdyati (1.4.38)

(16) aksān dīvayati (1.4.43)
    ‘...plays the dice’

(17) aksāir dīvayati (1.4.42)
    ‘...plays with dice’

(18) śatena parikṛtah (1.4.42)
    ‘...hired for a hundred’

(19) śatāya parikṛtah (1.4.44)

(20) grāme vasati (1.4.45)
    ‘...is living in the village’

(21) grāmam abhinivisate
    ‘...enters the village’

(22) grāmam adhiśete (1.4.46)
    ‘...sleeps in the village’

13 See also Cardona (unpublished (a)).
Kāraka and Vibhakti

(23) devadattaḥ grāmād āgatyā kāṣṭhaḥ sthālyām odanaṃ pacati
    'Devadatta, having returned from the village, is cooking rice with
    firewood in the pot'
(24) sthāli pacati (1.4.54)
    'the pot is cooking'
(25) odanaḥ pacati (1.4.54)
    'the rice is cooking'
(26) kāṣṭhāni pacanti (1.4.54)
    'the firewoods are cooking'

Recall that apādāna, sampradāna, karaṇa, adhikaraṇa, karman and
kartṛ have been defined with generalized semantic equivalencies as
dhruva (1.4.24)—...yam abhipraitī (1.4.34), sādhakatamam (1.4.42), ādhāraḥ
(1.4.45), īpsitatamam (1.4.49) and svatantraḥ (1.4.54) respectively. Sentences
(8) and (13) are incorrect because they attempt to assign the
categories adhikaraṇa and karman to himavat and devadatta in accordance
with the semantic equivalents. Rules 1.4.31 and 1.4.34 which expressly
require the assignment of apādāna and karman will be rendered without
any scope of application (niravakāśa). Thus, what could have been
semantically classed as adhikaraṇa and karman are classed as apādāna
and sampradāna. These rules are both occasioned by what one may call
surface constraints. Similar constraints operate in the formation of rules
1.4.27, 1.4.36, 1.4.38, 1.4.46 and 1.4.47. Rule 1.4.27 requires that a kāraka serving as a thing desired, when roots having the signifi-
cation of vāraṇa are in use, is termed apādāna. Rule 1.4.36 assigns
the category sampradāna to a thing one desires, when, of course, the
action is denoted by sṛṣṭi ‘to yearn’. Sentences (9), (10), (15), (21) and (22)
illustrate this.

Sentences (23) through (26) are included to illustrate the aspect of
vivakṣā. Sentence (23) uses grāma, kāṣṭha, sthāli and odana to denote
respectively apādāna, karaṇa, adhikaraṇa and karman. Kartṛ is expressed
by the verbal ending tiP. Sentences (24), (25) and (26) view sthāli, odana
and kāṣṭha as their kartṛ; of course, devadatta, the main kartṛ of (23) is
not used in these sentences. Commentators explain that sthāli, odana
and kāṣṭha are all kartṛ with reference to their own actions (see above
fns. 7, 8). A speaker may wish to highlight their kartṛtuva and consequently
may use sentences (24-26). It is interesting to note that there are no
examples where apādāna and sampradāna are used as kartṛ. Patañjali,
h owever, cites

(27) balāhako vidyotate
    'the cloud is lightening'
parallel to sentences
(28) balāhakād vidyotate
    'it is lightening from the clouds', and
(29) balāhake vidyotate
   ‘it is lightening in the clouds’\textsuperscript{14}
No such examples are cited for the kartṛṭva of sampradāna. Even with the above examples, one must treat certain expressions as understood. Thus, (28) would be treated as balāhakād niḥśṛtya vidyotate ‘having come out of the clouds...’ where niḥśṛtya will be treated as understood (Bhāṣāvṛtti:42). Such usage of apādāna becomes parallel to prāsādāt prekṣate ‘he is looking from top of the palace’ where (prāśādam) āruḥya ‘having climbed (on top of the palace)’ is to be supplied (Bhāṣāvṛtti:79).
I have already stated that 1.4.51 akathitam ca is residual (śeṣa) in nature. It states that a kāraka not classed as apādāna, etc., is classed as kārman. A long discussion of the need for and exact scope of this rule is presented in the Mahābhāṣya (Mbh. II:413-28), especially with reference to a select list of verbs involving double objects. Thus, in
(30) pauravam gām yācate
   ‘he asks Paurava for a cow’, and
(31) gām dogdhi payah
   ‘he milks the milk from the cow’
go and payas are objects under the provisions of 1.4.49. Rule 1.4.51 assigns the term kārman to Paurava and go which would have been confused with category apādāna.
Commentators have investigated the scope of the general kāraka categories at length. They have scrutinized not only the general properties of these kārakas, they have also discussed their subtypes. For example, the Mahābhāṣya questions the propriety of stating additional rules specifying the category apādāna.\textsuperscript{15} That is, a question is raised whether rules 1.4.25 through 1.4.31 are even required at all. According to this view, 1.4.24 alone is sufficient to handle the instances of apādāna covered by these later rules. To do this, one must stipulate that apāya ‘movement away’ need not just be physical; mental turning away also counts. Consequently, the source of fear (1.4.25) and the thing unbearable (1.4.26) could serve as dhruva for purposes of mental contact and aversion. Similar arguments are made against other rule formulations. Examples such as
(32) dhāvato śvāt patati
   ‘he is falling off the running horse’
are cited to illustrate that dhruva should not be interpreted in its literal sense of being fixed. Instead, it should be interpreted as point of reference for movement away. This would allow a running horse to serve as fixed

\textsuperscript{14} Mbh. I, 204: ...tasya paryāyena vacanaṃ bhaviṣyati. vacanāśrayac ca samjñā bhaviṣyati. tad yathā- balāhakād vidyotate vidyut. balāhake vidyotate. balāhako vidyotata iti.

\textsuperscript{15} Mbh. I, 250-51: ayam yogah śakyā vaktum. katham vṛkebhya bībheti caurebhyaṃ trāyata iti? iha tāvat...ya eva manusyāḥ prekṣāpārvakārī bhava tv api paśyati yadi mām vṛkāḥ paśyanti dhruvam me mṛtyur iti. sa buddhyā samprāśyam nivartate, tatra “dhruvam āpāye pādānam” ity eva siddham...
point for *apāya* since in a spatio-temporal continuum characterized by the act of running, the fall of the rider must have occurred at some particular point in time and space. Based upon whether the *apāya* is explicitly mentioned (*nirūṣa*), indirectly included (*upāta*) or inferred, three types of *apādāna* are discussed: *nirūṣṭavisaya, upūtavisaya* and *apekṣitakriya* (VP. III:392). Sentences (33-36) illustrate these subtypes.

(33) grāmād āgacchati
    ‘...is coming from the village’
(34) balāhakād vidyotate vidyut
    ‘...the lightening emanates from the clouds’
(35) kuto bhavān?
    ‘where have you come from?’
(36) pāṭalipūtra
    ‘from Pāṭalipūtra’

Pāṇini uses the word *karman* both in the sense of the object and of the action. The word *karmanā* in 1.4.32 *karmanā sampradānam* has been interpreted both ways. If one interprets *karmanā* as ‘by means of an object’, a *kāraka* intended by means of an object will be treated as *sampradāna*. This would qualify the village (grāma) of

(37) ajām grāmām nayati
    ‘he is leading the goat to the village’

to be wrongly termed *sampradāna*. To avoid this, an appeal is made to treat *sampradāna* as carrying its etymological meaning ‘he to whom something is properly given’ (samyak *prakāśena diyate yasmai*). This, however, will restrict the use of *sampradāna* to actions denoted by verbs having the signification of dā ‘to give’. The *karman* ‘object’ interpretation will still rule out assignment of *sampradāna* to a *kāraka* joining in an action denoted by an intransitive verb root. Consequently, *śrāddha*, *yuddha* and *pati* would not qualify for *sampradāna* in

(38) śrāddhāya nigarhate
    ‘he disapproves of the śrāddha ritual’,
(39) yuddhāya sannahyate
    ‘he prepares for battle’, and
(40) patye šete
    ‘she reclines for her husband’.

Patañjali recommends that the word *kriyā* ‘by means of an action’ should be read in the rule along with *karmanā*. Thus, *śrāddha*, *yuddha* and *pati* will

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16 Nyāsa ad Kaś. 1, 545: ...yadi karmanā yam abhiprāti sa sampradānasamjño bhavati, evam ajām nayaśī grāmām ity ajādirhīr nayanakriyākarmābhīḥ sambadhyanānaya grāmāyā sam-pradānasamjñā prasaṣyeta... sampradānaṁ iti mahaśūḥ karanasyaśat prayojanaṁ anvarthasaṁjñā yathā viśnūyeta samyak *prakāśena diyate yasmai tat sampradānam iti...*  
17 Mbh. 1, 256: kriyāgrahaṇaṁ api kartavyam. ihāpi yathā syāt śrāddhāya nigarhate, yuddhāya sannahyate, patye śete iti.
be entities intended by the action. But the question is: why didn’t Pāṇini consider it. Besides, as Joshi says,18 this would apply equally to *karman* ‘object’. To avoid this, one may allow a conflict to obtain between *sampradāna* and *karman* which is resolvable, by 1.4.2, in favour of *karman*. Thus, in

(41) upādhyāya gām dādāti
   ‘he is giving the cow to the teacher’

go uniquely will be termed *karman*. Patañjali does not accept *sampradāna* as the indirect object of dā ‘to give’.19

Pāṇini uses superlatives in defining *karaṇa* and *karman*. The -*tamaP* of 1.4.42 and 1.4.49 requires that only the means *par excellence* be termed *karaṇa*. Similarly, the thing desired more than anything else is to be termed *karman*. Since all kārakas serve as means towards accomplishing an action, they all could be termed *karaṇa*. The use of -*tamaP* prevents this. Specifically, Pāṇini assigns the term *sampradāna* to the thing desired (śāsita) when it participates in an action denoted by *sprūḥ*. Obviously the absence of -*tamaP*, in īṣita, takes it out of the realm of the *karman* category. Rule 1.4.27 states that a desired thing is termed *apādāna* when participating in an action denoted by roots having the signification of vāraṇa ‘to ward off’. Now if -*tamaP* is used in 1.4.49, māṇavaka ‘boy’ would qualify for both *apādāna* and *karman* in

(42) agner māṇavakāṃ vāraṇayati
   ‘he is warding the boy off the fire’

The *karman* designation cannot prevail on the basis of *paratva* since 1.4.27 then would be left with no scope of application. This is further justification for keeping -*tamaP* in 1.4.49.

Bhartṛhari,20 in the *Vākyapadiya* discussed three different types of *karman* ‘object’: nirvartya ‘that which is brought about’, vikārya ‘that which is modified’ and prāpya ‘that which is reached’. A nirvartya object is one which is brought into existence. Thus, we get a sentence such as mṛdā ghatam karoti ‘he makes a pot with clay’. The pot here is newly brought into existence. As opposed to this, we find a sentence such as suvarṇam kundale karoti ‘he makes gold into ear-rings’. In this case, the gold attains a modified form (vikārya) but the material cause of the ear-rings is still the same. Instances where the material cause of a thing is totally destroyed would still be called vikārya although treated differently from one where the material cause is intact, as is the gold in the ear-rings. Consider kāṣṭham bhasma karoti ‘he reduces the wood to ashes’. Here the material cause, wood, is completely destroyed. Finally, a prāpya-*karman* is beyond the effect

19 Ibid.
20 VP. III: 138: nirvartyo vā vikāryo vā prāpyo vā sādhanāsrayah, kriyānām eva sādhyatvāt siddharūpo bhidhiyate.
of the action. At least no effect of action can be seen or inferred upon it. Thus, in sentences ādityaṁ paśyati ‘looks at the sun’ and grāmam gacchati ‘goes to the village’, sun and village remain unaffected by the actions of seeing and going respectively. Note that in the two earlier types, the action does affect the karman. In case of nirvartya-karman, the material attains a new identity; in vikārya, it may be either totally destroyed or retained.

Additionally, four subtypes of karman have been recognized. Consider the following sentences.

(43) grāmam gaccaṁ tṛṇam śṛṣṭi
   ‘while going to the village he is touching the straw’

(44) viṣam bhūnte
   ‘he is consuming poison’

(45) māṇavakaṁ panthānām prcchati
   ‘he is asking the boy the direction’

(46) māṇavakaṁ abhikrudhyati
   ‘he is angry with the boy’

Sentence (43) has tṛṇa ‘straw’ as an object which is attained with indifference (audāśīnya). The poison (viṣam) of sentence (44) is certainly not desired by the agent, but is related to the action in the same way something desired would be related; this is aptly called an instance of anitśita ‘undesired’ karman. Sentence (45) illustrates an instance of akathita ‘not stated’ karman. Thus, māṇavaka ‘boy’ is a karman which cannot be covered by categories previously classed. The karman status of māṇavaka in sentence (46) is different. It represents a type of karman which has previously been classed as some other kāraka. Thus, he towards whom anger is directed is classed as sampradāna ‘dative’. However, here māṇavaka is classed as karman even though he is the one towards whom anger is directed. Why — because the verbal root krudh is used with the preverb abhi. Consequently, what was classed as sampradāna now is classed as karman.

Commentators also recognize three types of adhikarana:21 vyāpya where the locus totally encompasses the thing located in it, aupāślesika where the locus is characterized by proximity and vaisayika where it is characterized regardless of any physical contact or nearness. Thus, we find respectively

(47) tileṣu tailam
   ‘there is oil in sesame’

(48) gaṅgāyāṁ ghosah
   ‘the dwelling of cowherds on the bank of the Gaṅgā’ and

(49) garau vasati
   ‘he is staying with the teacher’.

Kārya is the last kāraka term of the domain. It has been defined as one who participates in an action completely of his own accord. It is said to be independent (svatantra) in comparison to the participation of other

kārakas in an action. If action can be accepted as the central denotatum of a Sanskrit sentence, kartṛ is an a priori kāraka. The independence of an agent lies in the fact that it is the first kāraka to embark upon the accomplishment of an action. The other kārakas are brought into play by the agent. It is also the last kāraka to cease its activity (see above fn. 11).

Since an action denoted by a primitive root is distinguished from one denoted by a derived causative root, a distinction between their agents must be maintained. Pāṇini additionally assigns the term hetu to the kartṛ of a causal action. Questions have been raised whether Devadatta of

(50) devadattāḥ pacati

‘Devadatta is cooking’,

and Yajñadatta of

(51) devadattāḥ yajñadattena pācayat odanam

‘Devadatta has Yajñadatta cook the rice’

can be treated on par with respect to their independence (svātantrya). In (51), Devadatta is a prompter agent who has prompted agent Yajñadatta cook the rice. The prompter agent clearly can be viewed as more independent than the prompted one who becomes a kāraka in an action only after already having been prompted. Patañjali,22 however, states that even though Yajñadatta has to wait to be prompted to act, he is independent with respect to the action of cooking in (51).

It has already been stated that based upon vivakṣa, a kāraka can be classed as kartṛ. Consider sentence

(52) devadattāḥ sthālyāṁ agninā pācayt odanam

‘Devadatta is cooking rice with fire in the pot’

The locus (adhiśkaraṇa), instrument (karana) or object (karman) of (52) may be classed as kartṛ to yield the following sentences.

(53) sthāly agninā pācayt odanam

‘the pot is cooking the rice with fire’

(54) sthālyāṁ agniḥ pācayt odanam

‘the fire is cooking the rice in the pot’

(55) sthālyāṁ agninā odanaḥ pacati

‘the rice is cooking in the pot by means of fire’

As is evident, the main agent, Devadatta, is not expressed in these sentences. Their passive counterparts will be as follows.

(56) devadattena sthālyāṁ agninā pacyata odanaḥ

‘rice is being cooked by Devadatta with fire in the pot’

(57) sthālyā agninā pacyata odanaḥ

‘rice is being cooked by the pot with fire’

(58) sthālyāṁ agninā odanaḥ pacyate

‘rice is being cooked by fire in the pot’

22 Mbh. I, 278: ... pācayat odanam devadatto yajñadattaneti svatantro’ sau bhavati. itarathā akurvyat api kārayatiti syāt.
(59) sthāyāṁ agrinā odanena paṇyate
   ‘cooking is done by the rice in the pot with fire’

The expression of the kāraka relationship by nominal endings and verbal forms is not problematic in these sentences. It follows 3.1.68 laḥ karmanī cā bhāve cākarmakebhyaḥ which states that an affix LA is used after a transitive verb to express either an agent or object, and after an intransitive verb to express either agent or bhāva. Now consider the following sentences.

(60) devadattah hasati
   ‘Devadatta is laughing’

(61) devadattena hasyate
   ‘id.’

(62) devadattayajñadattaḥ hasatāḥ
   ‘Devadatta and Yajñadatta are laughing’

(63) devadattayajñadattābhyaḥ hasyate
   ‘Devadatta and Yajñadatta are laughing’

(64) devadattayajñadattau grāmam gacchātah
   ‘Devadatta and Yajñadatta are going to the villages’

(65) devadattayajñadattābhyaṁ grāmo gamyate
   ‘the villages are being gone to by Devadatta and Yajñadatta’

Notice that the verbal root has ‘to laugh’ is intransitive. Consequently, a LA affix introduced after it must denote either the agent or bhāva. Sentence (60) has a replacement in tī which, in turn, expresses the agent. Sentence (61) expresses the agent with tṛtīyāḥ, the third triad of sUP. As a result, hasyate of (61) is expressing the bhāva. Now, compare (62) and (63). Both have dual agents. In the active, where the verb is expressing the agent, its form is in dual. However, in (63) where the verb is expressing bhāva, it remains singular even though there are two agents. A verb root expressing bhāva is always put in the third person singular because bhāva ‘root sense’ itself lacks duality or plurality. As opposed to this, where agent or object is expressed, as in (64) and (65), there is an agreement of number and person in the verbs.

Bhaṭṭoji23 explains that when a kāraka other than an agent is treated as agent because of vivakṣā, an additional meaning is expressed, explained as sauksaryātiśaya ‘extreme facility’. This is the quality which enables an object, instrument or locus, when classed as agent, to accomplish the act as an agent. The fact that what was object, etc., can be viewed as agent has consequences for the denotatum of LA. We know that a LA is introduced after transitive roots when agent or object is denoted. However, when what was object becomes agent, we find that the verb has lost its object and hence the LA of a transitive verb expresses kartr or bhāva just as it does with intransitive roots. That is, a transitive root whose object is, for reasons of sauksaryātiśaya,

treated as agent, becomes intransitive. Once intransitive, its \textit{LA} can be introduced to express only agent or root sense. Thus we get:

\begin{enumerate}
\item[(66)] \textit{odanam pacyati}
\hspace{1cm} 'he is cooking rice'
\item[(67)] \textit{odana pacyati}
\hspace{1cm} 'the rice is cooking'
\item[(68)] \textit{odanena pacyate}
\hspace{1cm} 'the rice is being cooked'
\item[(69)] \textit{odana pacyate}
\hspace{1cm} 'rice is cooking'
\end{enumerate}

This last sentence is problematic. It has an agent which was object. Consequently, its verb is now intransitive and must either express agent or \textit{bhāva}. Now, what is being expressed by the verb of (69)? If \textit{bhāva}, then why is the agent \textit{odana} still in the nominative; if agent, then why is \textit{yaK} introduced? Pāṇini's rule 3.1.87 \textit{karmavat karanāt tulyakriyāh} informs us that an agent is treated as object when the action of the agent is identical with an action which has the object as its locus. An action is treated as having its object as locus when the object is affected by the action. The rice is the locus of the action of cooking since the rice, when cooked, undergoes changes such as \textit{viklītī} 'softening'. Note that 3.1.87 is an extension rule whereby something which was not available is made available and what is made available is operation (\textit{kārya}). In sentences (68) and (69), the verb is intransitive. Consequently, it will express either agent or \textit{bhāva}. Affix \textit{yaK} is introduced before an \textit{ātmanepada} affix when \textit{karan} or \textit{bhāva} is being expressed (1.3.9 \textit{bhāvakaranāh}). Since the verb of (69) is intransitive and \textit{odana}, the agent, is in the nominative, the verb must express the agent. Given this, however, the form would be (67) \textit{odanah pacati} and not (69). To account for (69), Pāṇini, by 3.1.87, extends \textit{karan} status to the agent which is expressed by the verb. This extension results in the introduction of \textit{yaK}, etc., so that (69) can be derived.

One may ask here why such an extension cannot be made for (68) where \textit{(odana}, the agent, marks an activity similar to an object, as provided for by 3.1.87. First of all, in (68), the \textit{LA} is introduced to express \textit{bhāva}, not agent. Secondly, the agent is treated as if it were an object only when one wishes to view it as an object. Otherwise, one would derive (68) only. Furthermore, examples such as (69) are cited as having an addition: \textit{svayam eva} 'just by itself', which, in turn, denotes \textit{saukaryātiśaya}. When \textit{saukaryātiśaya} is not expressed, when one does not wish to view the agent as an object, one remains with (68).

Commentators explain this process of treating the agent as object as \textit{karmavadbhāva}. This is only possible with reference to actions which have object as their locus (\textit{karmasthakriya}). Thus, \textit{pac} 'to cook' and \textit{bhīd} 'to split' are actions which have, for example, \textit{odana} 'rice' and \textit{kāṣṭha} 'wood' as their
locus. Now consider the verbal root *gam ‘to go’. The action denoted by this verb is located not in the object of going, such as grāma ‘village’, but in the agent, the one who goes. Similarly, the action denoted by smṛ ‘to remember’ has its locus again in the agent. Such agents cannot be treated as object. This blocks sentences such as

(70) *grāmo gamyate svayam eva
‘the village, by itself, is gone to’.

Let us now discuss the nominal endings (vibhakti) which Panini introduces after items termed nominal stems (prātipadika: 1.2.45 arthavad..., 1.2.46 kṛtāddhita...). A sentence may entail relations which may not be captured by the kāraka categories. I shall refer to these as non-kāraka relations. These relations are purely notional as distinct from kāraka relations which are grammatical. For example, in

(71) vṛksasya pārṇāni patanti
‘the leaves of the tree are falling’

vṛkṣa ‘tree’ is not a kāraka as it does not contribute anything towards accomplishing the action of falling (patana). Consequently, vṛkṣa does not relate to the action as a kāraka. Panini introduces nominal endings to express both kāraka and non-kāraka relations.

Rule 2.3.1 anabhihīte governs the introduction of nominal endings. It states that a nominal ending should be introduced only when relations denoted by it are not already expressed, by something else. Commentators explain that the denotatum of a nominal ending may be expressed by means of a tiNi ‘verbal ending’ (3.4.78 tiptasjhi...), kṛt ‘primary suffix’ (3.1.93 kṛd atīñ), taddhita ‘secondary suffix’ (4.1.76 taddhitāḥ) or samāsa ‘compound’. Consider, for example, the following sentences.

(72) kātaḥ kriyate
‘a mat is being made’

(73) kṛtaḥ kātaḥ
‘a mat has been made’

(74) satyāḥ asvah
‘a horse bought for a hundred’

(75) prāptodako grāmah
‘a village to which water has reached’

The above examples have their objects expressed by means of a tiNi, kṛt, taddhita and samāsa respectively. Thus, the object is expressed by the tiNi affix te (3.4.69) in kriyate in (72), and by the kṛt affix Kta (3.2.101) in kṛtaḥ in (73). Consequently, kātaḥ in the above two examples cannot express the object by means of the second triplet of nominal ending (-am; 2.3.2 karmāṇi dvitiyā). The taddhita affix yaT (5.2.1) expresses the karmāṇi in satyāḥ.

24 Kāś. II, 151: ..karmāṇi dvitiyā... vaksyati “karmāṇi dvitiyā” kātaḥ karoti. grāmam gacchati... kriyate kātaḥ. kṛtaḥ. kātaḥ. satyāḥ. satikāḥ prāptodako grāmah.
while the same is expressed by the compound prāptodakah in (75). It is clear from the above that neither a kāraka nor a non-kāraka relationship can be expressed by a nominal ending if it has already been expressed otherwise. The domain of the nominal endings extends up to 2.3.73 caturtiḥi caśiyāyusya... The following is a select listing of rules enumerating nominal endings.

2.3.1 anabhīhitē
‘when not expressed otherwise’

2.3.2 karmāṇaḥ dvitiyā
‘dvitiyā ‘second triplet’ when karmāṇa object is not expressed otherwise’

2.3.4 antarāntareṇaḥ yukte
‘dvitiyā when antarā ‘in between’ and antareṇa are co-occurring’

2.3.5 saptamīpancamyaḥ kārakamadhye
‘saptami ‘seventh triplet’ or paṇcamī ‘fifth triplet’ after items denoting kāla ‘time’ or adhvā ‘space’ between two kārakas ‘participants’

2.3.6 karmaprvacanīyayukte dvitiyā
‘dvitiyā when a karmaprvacanīya (1.4.83 karma...) co-occurs’

2.3.13 caturtiḥi sampradāné
‘caturtiḥ ‘fourth triplet’ when sampradāna is to be expressed’

2.3.15 tumarthaḥ ca bhāvavacanāt
‘caturtiḥ after an item denoting bhāva ‘action’ similar to -tumUN’

2.3.18 kartrkarāṇayayās tṛtīyā
tṛtīyā ‘third triplet’ when kartr or karman is not expressed otherwise’

2.3.19 sahayukte pradhāné
tṛtīyā after an item denoting apradhāna ‘secondary’ co-occurring with saha ‘with’

2.3.23 hetau
‘tṛtīyā when hetu ‘cause’ is to be expressed’

2.3.28 apādānā paṇcamī
paṇcamī ‘fifth triplet’ when apādāna ‘ablative’ is to be expressed’

2.3.29 enapā dvitiyā
dvitiyā after an item co-occurring with an item ending in enaP (5.3.35 enab...)’

2.3.32 prthagvinānaṇābhīs tṛtīyā nyatarasīyām
‘tṛtīyā optionally after an item co-occurring with prthak ‘separate’ vinā ‘without’ or nāṇā ‘various’

2.3.36 saptamī adhikaraṇe ca
‘saptami also when adhikarana ‘locus’ is to be expressed’

2.3.41 yataś ca nirdhāranaṁ
‘sasthī ‘sixth triplet’, and also saptamī, after an item denoting a group from among which one is singled out (nirdhārana)’

2.3.46 prātipadikārthaṁ parimāṇavacanāṁatre prathamā ‘prathamā ‘first triplet’ when prātipadikārtha ‘nominal stem notion’ alone is to be expressed’
2.3.47 sambodhane ca
‘prathamā also when sambodhana ‘address’ is to be expressed’

2.3.50 saṣṭhī ī⊆e
‘saṣṭhī when śeṣa ‘remainder’ is to be expressed’

2.3.65 kartykarmanoḥ kṛtī
‘saṣṭhī after an item co-occurring with an item ending in a Kṛt when karty or karman is to be expressed’

2.3.66 ubhayaprāptau karmanī
‘saṣṭhī to express karman alone after an item co-occurring with another item ending in a kṛt when karty and karman both are to be expressed’

The above select listing cites nominal endings with their semantic definitions, syntactic constraints and co-occurrence conditions. The order of enumeration is dvitiyā, triyā, caturthī, pañcami, saṣṭampi, prathamā and saṣṭhī. Here again Pāṇini abstracts generalizations from usage and orders adjustments by means of rules which could be termed exceptions and residues. The scope of nominal endings is very wide and complex. It is wide because the endings express both kāraka and non-kāraka relations. It is complex because, in addition to the constraint of 2.3.1 anabhāhīte, the introduction of nominal endings is further constrained by syntactic, syntactico-semantic, semantic and formal co-occurrence restrictions. Consider, for example, the following sentences.

(76) koṭam karoti
‘he is making a mat’

(77) antareṇa puruṣakārāma na kīm cīl labhyate
‘nothing can be gotten without diligent effort’

(78) māsama adhitē
‘he studies for the entire month’

(79) ihaṣtho yam iṣvāsah krośāl lakṣyām vidhyati
‘sitting here this archer can shoot a target at a distance of two miles’

(80) puspabhīyo vrajati
‘he is going for flowers’

(81) pākāya vrajati
‘he is going to do the cooking’

(82) putrēṇa sahāgataḥ pitā
‘the father arrived with the son’

(83) goṣu duhyamānasu gataḥ
‘he left while the cows were being milked’

(84) rudataḥ prāvṛjīt
‘he set out to become a wandering ascetic, not heeding the cries of relatives’

(85) rudatī prāvṛjīt
‘id.’

(86) gavām kṛṣṇā sampannakṣātraṇā
‘among cows black are richest in milk’
(87) goṣu kṛṣṇā sampannakṣīrātman ī
‘id.’
(88) māthrurāḥ pāṭaliputrahebhyaḥ ādhyataraḥ
‘the people of Mathurā are richer than the people of Pāṭaliputra’
(89) rājñāh purusasya gṛham
‘the house of the king’s servant’

Sentence (79) uses dvitiyā to express kārman, a grammatical relation. This, in turn, becomes the general denotatum of dvitiyā. Pāṇini generalizes the use of tṛitiyā, caturthi, pañcamī and saptamī to express kārty, karana, sampradāna, apādāna and adhikarana respectively. Each generalization is followed by adjustments to accommodate particular usage. For example, (77) uses dvitiyā in puruṣakāram ‘diligent effort’ not to express kārman but to meet the dictates of a formal co-occurrence condition characterized by the use of antareṇa ‘without’. One may interpret this use of dvitiyā as one governed by antarā ‘in between’ and antareṇa.

The use of tṛitiyā in (82) similarly is governed by saha ‘with’. Thus, tṛitiyā with a general denotatum of kārty and karana may be used to meet a co-occurrence condition. Sentence (78) specifies atyanatasamyoga ‘continuous connection’ as a condition for introducing dvitiyā after items denoting kāla ‘time’ or adhvā ‘road, space’. Note that the denotatum of dvitiyā can be interpreted here as atyanatasamyoga only with reference to time or space. However Pāṇini also provides for the introduction of either a saptamī or a pañcamī after items denoting time or space between two kārakas. The pañcamī in kroṣāt in (79) thus signifies the distance between the kārty (īsvāsah) and the kārman (lakṣya). We already know that caturthi is introduced generally to denote sampradāna (2.3.13 caturthi sampradāne). However consider (80) where its use is complex. It denotes the object of an action for which another action is intended. Sentence (81) is similar. Here caturthi is introduced after pāka, a nominal stem which ends in an affix denoting action (bhāva) identical with the denotatum of -tumUN.

The use of pañcamī in (79) is restricted by a syntactico-semantic condition: the denotation of time and space in between two kārakas. The seventh triplet (saṭpamī) generally is considered to denote locus (adhikarana: 2.3.36). However it is also used after a nominal stem whose underlying action characterizes another action. Thus, the action of going denoted by gam is characterized by the accompanying action of the milking of cows. Sentences (84-85) illustrate that genitive optionally can be used to signify the same, providing anādāra ‘disrespect’ is denoted. This denotatum of saṇtamī and saṣṭhī is purely notional. These endings also can be used to denote nirdhāraṇa ‘singling out one from among many’ as (86-87) exemplify. However, 2.3.41 yataś ca nirdhāraṇām allows nirdhāraṇa by either locative or genitive only when the entities from among which one is
singly out are similar. For singling out one from among many dissimilar things, one must use \textit{pañcamī}, as is clear from (88). Sentence (89) illustrates the residual use of \textit{sāṣṭhi}, a residue covering what has not yet been covered by earlier rules.

The preceding information reveals some interesting features of the use of nominal endings.

(a) nominal endings denote both \textit{kāraka} as well as non-\textit{kāraka} relations,
(b) they do not denote a single fixed semantic or syntactic relation,
(c) there is certainly no one-to-one correspondence between endings and their denotata,
(d) rules for nominal endings generally are enumerated in the reverse order of \textit{kāraka} rules, and
(e) selectional restrictions imposed on nominal endings are complex because they lexicalize diverse syntactico-semantic categories.

Considerable discussion has occurred in modern linguistics concerning the level of representation of \textit{kārakas} and their lexicalization by means of nominal endings. Cardona\textsuperscript{25} views the \textit{kārakas} as constituting a level which mediates between semantic relations and actual sentences. This view essentially is correct. However, we run into problems when we try to determine whether Pāṇini’s \textit{kāraka} categories are syntactic or notional. I have already stated that nominal endings express both \textit{kāraka} and non-\textit{kāraka} relations. Since Pāṇini maintains a distinction between the \textit{kāraka} and non-\textit{kāraka} relations, and also since the non-\textit{kāraka} relations are nothing but notional, the \textit{kārakas} must represent a non-notional relation. Can this non-notional relation be considered grammatical? The answer must be in the affirmative.

First of all, if Pāṇini had intended his \textit{kāraka} categories to be based on semantics, he would have done better by treating \textit{kāraka} and \textit{vibhakti} rules together. This would have made his description much more economical. He did not do so, however, and we can only conclude that this has a definite bearing on the nature of his theory. Secondly, his separation of \textit{kāraka} and \textit{vibhakti} introduces yet another distinction into his system which cannot be ignored. Pāṇini does not subscribe to the notion of a one-to-one correspondence between the categories of \textit{kāraka} and their lexicalization by means of \textit{vibhakti}. Finally, if Pāṇini had not sought to establish a clear-cut distinction between syntactic as opposed to notional relations, he would certainly have included notional relations in the categories he set up. The genitive, for example, is not a \textit{kāraka} in Sanskrit. The nominative also is missing from the list of \textit{kārakas}. These omissions are intentional. In a theory of derivation which treats action as the central denotatum of a sentence, anything which is not directly relatable to action automatically becomes secondary.

\textsuperscript{25} Cardona (unpublished (a)).
If it is the non-relatability of the genitive to action which deprives genitive of the status of a kāraka, it is the separation of the levels of kāraka and vibhakti which excludes the nominative from the status of case. Pāṇini clearly was intent upon separating lexicalization of relations from the conceptual categories of case. Confusion over the question of whether his kāraka categories are semantic or syntactic has been due largely to the fact that he defines them in semantic as well as syntactic terms. Confusion also may be due to Pāṇini’s employment of certain endings, which are generally considered to express non-kāraka relations, to express kāraka relations. Consider the following sentences.

(90) mātuḥ smarati
   ‘he is remembering his mother’

(91) bhavataḥ katuḥ kartavyah
   ‘the mat should be made by you’

Sentence (90) has mātuḥ, the karmāṇ of smṛ ‘to remember’, in the genitive. Sentence (91) has bhavataḥ a kartṛ, in the genitive. This makes genitive an ending expressing a kāraka relation (kāraka-vibhakti). However, this does not bring to genitive the status of a kāraka. Pāṇini could not afford to mix levels, as a distinction between notional and grammatical relations on the one hand, and their expression by means of nominal endings on the other is crucial to his theory of grammatical descriptions.
10

Derivational System

Pāṇini, as discussed in chapter 3, uses word derivation as the most economical tool for deriving sentences. In doing this, he makes generalizations, abstracts the CS of sentences, inserts lexical items and introduces affixes to denote diverse syntactico-semantic relations. He then follows a set of operations which ultimately yield a pada (1.4.14 suptīnantam padam). Thus, the highest derivate in the Pāṇinian system is a pada. This, however, should not give one the impression that the Pāṇinian pada is a morphological entity. Since a pada is derived with reference to the CS of the sentence in which it occurs, it is a syntactic unit. These units are of two types depending upon whether the pada ends in a sUP (4.1.2 svaujas...) or in a tiN (3.4.78 tiptasji...).

The operational aspect of the Pāṇinian derivational system focuses mainly on bases (prakṛti), affixes (pratyaya) and subsequent operations (kārya). Bases form the primary input in the grammar. They are of two kinds, dhātu ‘verb root’ and prātipadika ‘nominal stem’. Roots and nominal stems are also of two types, basic as well as derived. Basic roots are those which have been enumerated in the DP. The GP has a listing of basic stems. Derived roots are those which end in affixes saN, etc. (3.1.32 sanādyantā dhātavah). Compounds (saṃhāsa) and items which end in affixes kṛt (3.1.93 kṛt atin) and taddhīta (4.1.76 laddhītah) constitute the derived nominal bases. I shall use the term base-input to refer to nonderived bases. The affixes which Pāṇini manipulates to derive bases and padas are kṛt, taddhīta, strī ‘feminine’ (4.1.3 strīyām), sUP and tiN. The last two are referred to as vibhaktis (1.4.103 vibhaktiś ca).

The following schema shows the types of forms derivable in Pāṇini; one must read across taking one item at a time.

The key to the symbols is as follows:

\[ b_1 = \text{prātipadika} \]
\[ b_2 = \text{dhātu} \]
\[ v_1 = \text{sUP} \]
\[ v_2 = \text{tiN} \]
\[ \text{aff}_1 = \text{stripratyaya} \]
\[ \text{aff}_2 = \text{taddhīta} \]
\[ \text{aff}_3 = \text{kṛt} \]
The above schema will yield seven combinations.

1. \( b_1 + v_1 \)
2. \( b_1 + \text{aff}_1 + v_1 \)
3. \( b_1 + \text{aff}_2 + v_1 \)
4. \( b_1 + \text{aff}_2 + \text{aff}_1 + v_1 \)
5. \( b_2 + v_2 \)
6. \( b_2 + \text{aff}_3 + v_1 \)
7. \( b_2 + \text{aff}_3 + \text{aff}_1 + v_1 \)

I shall illustrate the Pāṇinian derivational process by systematically discussing the derivational history of the above seven types of derivates. Additionally, some highly complex derivations will be taken up to further support our observations. A set of derivational conventions will be presented along the way. The symbols I shall use, in addition to those already discussed, are as follows.

- concatenation
- input on left of the arrow
- \((x \rightarrow y)\)\( x \) becomes \(y\)
- \# marks the process of reference
- \((AD)\) aṅga domain
- \((CD)\) controlling domain
- \((OD)\) obligatory domain
- \((PD)\) pada domain

Capitalised symbols not enclosed in ( ) are dummy symbols (ūts); they are later realized as zero.

Pāṇinian word derivation starts with a nominal stem (prātipadika) or a verbal root (dhātu) as its base-input and terminates with the derivation of a word (pada). The following is the derivational history of two Sanskrit sentences with two words each.
<table>
<thead>
<tr>
<th>(1) kumārah / (2) kumārī (3) pacati</th>
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<tbody>
<tr>
<td>'the boy / girl cooks'</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>kumārah 'the boy'</th>
<th>kumārī 'the girl'</th>
<th>pacati 'cooks'</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) kumāra →</td>
<td>kumāra →</td>
<td>pac →</td>
</tr>
<tr>
<td>1.2.45 (CD)</td>
<td>1.2.45 (CD)</td>
<td>1.3.1 (CD) bhūvadayo...</td>
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<tr>
<td>arthavad...</td>
<td>4.1.1 (OD)</td>
<td>3.1.91 (OD) dhātoḥ</td>
</tr>
<tr>
<td>4.1.1 (OD) iyāp...</td>
<td>4.1.3 striyām</td>
<td>3.2.123 vartāmane laḥ</td>
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<tr>
<td>4.1.2 svaujas...</td>
<td>4.1.20 vāyasi...</td>
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<tr>
<td># 1.4.100 tīnas...</td>
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<td>1.4.22 dvye kaylor...</td>
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<td>1.4.101 tāny eka...</td>
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<td>2.3.46 prātipadikārtha...</td>
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<td>= kumāra + ŪiP</td>
<td>= pac + LAT →</td>
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<td>(b) kumāra + ŪiP</td>
<td>(b) pac + LAT</td>
</tr>
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<td>1.3.8 (CD) lašakv...</td>
<td>3.4.69 laḥ...</td>
</tr>
<tr>
<td>1.3.9 tasya...</td>
<td>1.3.9</td>
<td>3.4.77 lasya</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.4.78 tiptasjhi...</td>
</tr>
<tr>
<td>+ kumāra + s →</td>
<td>= kumāra + āi</td>
<td>= pac + tiP</td>
</tr>
<tr>
<td>1.4.13 yasmāi...</td>
<td>kumāra + āi</td>
<td></td>
</tr>
<tr>
<td>6.4.1 aṅgasya (AD)</td>
<td>1.4.13 (CD)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6.4.1 (AD)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6.4.129 bhasya</td>
<td></td>
</tr>
<tr>
<td># 1.4.18 yaci...</td>
<td>6.4.148 yasyeti...</td>
<td>1.3.3 (CD) halantyam</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.3.9 tasya...</td>
</tr>
<tr>
<td>= kumāra + s</td>
<td>= kumār (a → ə) + āi</td>
<td>= pac + ti</td>
</tr>
<tr>
<td>(c) kumāra + s</td>
<td>kumārī + sUP</td>
<td>pac + ti →</td>
</tr>
<tr>
<td>1.4.14 suptī... (CD)</td>
<td></td>
<td>3.4.113 tiṇīṣṭ...</td>
</tr>
<tr>
<td>8.1.16 padasya (P)</td>
<td></td>
<td>3.1.68 kartari...</td>
</tr>
<tr>
<td>8.2.66 āsajūśo...</td>
<td></td>
<td>*an instance of reverse scanning</td>
</tr>
<tr>
<td>= kumāra + r Ü</td>
<td>= kumārī + s (UP → ə)</td>
<td>pac + ŠaP + ti</td>
</tr>
<tr>
<td>(d) kumāra + r Ü</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.3.2 (CD)</td>
<td>kumārī + s</td>
<td></td>
</tr>
<tr>
<td>1.3.9</td>
<td>1.2.41 aprkta ... (CD)</td>
<td>6.1.68 halīyā...</td>
</tr>
<tr>
<td>= kumāra + r</td>
<td></td>
<td>= pac + ŠaP + ti</td>
</tr>
<tr>
<td>8.3.15 khara-vasāna...</td>
<td>= kumārī + (s → ə)</td>
<td>1.3.3</td>
</tr>
<tr>
<td></td>
<td>= kumārī</td>
<td>1.3.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.3.9</td>
</tr>
</tbody>
</table>
The preceding is a generalized listing of rule applications which turns kumāra ‘boy’ and pac ‘cook’ into kumārah and pacati so that we could realize the sentence kumārah pacati. If we compute the ordering of domains manipulated above, we find the following.

\[
\begin{align*}
kumārah & \quad CD + OD + CD + \ldots + CD + AD + PD \\
pacati & \quad CD + OD + CD + OD + CD + PD
\end{align*}
\]

This suggests that the grammar undertakes derivations by applying rules in the controlling domain and terminates the derivations by applying rules in the pada domain. Constant reference is made to the controlling domain. The application of rules in the above schema is adopted from the traditional descriptions. However, even a cursory look at the derivative stages of kumārah and pacati poses the following questions.

How is the derivative mechanism activated?
What prompts access to or exit from various domains and interior domains?
What traffic rules and scanning conventions are optionally or obligatorily followed to arrive at the terminal string?
How do we know which rules are going to apply to a given string?
A thorough examination of a complete derivational history of various forms enables us to arrive at certain important generalizations regarding the functioning of this model.

4. This model cannot be manipulated unless the CS is clearly specified.
The basic content units in the CS must be matched by available items in the lexicon and a selection must be made.

5. The selected lexical items are then passed on to the CD for identification in terms of definitions. Such defined lexical items are then recognized as base-inputs and only then are charged with the function of activating the derivation mechanism.

6. Base-inputs must gain access to the OD where the definitional terms of these inputs must prompt access to an interior domain. Outputs of this as well as other domains are again subjected to definitional identifications since only definitions can prompt access to or signal the possibilities of further rule applications in a domain for all subsequent operations.

In deriving kumārah and pacati, we selected kumāra ‘boy’ and pac ‘to cook’ from the lexicon in accordance with a CS which can be outlined as \( x \) does \( y \) at a given time \( z \). The CD identifies them as prātipadika ‘nominal stem’ and dhātu ‘verb root’ respectively. When used as an input to the OD, kumāra is prompted access to the interior domain headed by 4.1.1 nyāp-prātipadikāt ‘after that which ends in \( Ō \), āP or else is a nominal stem’. On the other hand, pac is prompted access to the interior domain headed by rule 3.1.91...
dhātuk ‘after that which is a verb root’. This access is justified since these
governing rules contain the definitional terms prātipadika and dhātu which
have been used to identify the inputs.

At this stage, 4.1.2 suavjasa... becomes applicable in case of kumāra. Similarly
after 3.1.123 vartamāne lat has introduced the LAT affix, rules 3.4.77-
78 lasya-tiptasjhi... apply to pac + LAT. However, a serious problem is
encountered by these strings in the selection of elements enumerated
here. Rule 4.1.2 enumerates a set of twenty-one elements (abbreviated
sUP); 3.4.78 enumerates eighteen (abbreviated tiN) which replace LA
members. How and why should we choose one element out of all these?

A referential index (see chapter 4 for details) of sUP and tiN brings rules
relating to parasmaipada and atmanepada, kāraka and vibhakti and LA place-
ment and operation close to rules enumerating sUP and tiN. As a result, we
can select sU after kumāra and tiP after pac where the former is a nominal
inflection expressing the nominal stem notion (prātipadikārtha) and the lat-
ter is a verbal inflection which replaces LAT and expresses the agent
(karty). These applications yield the following string:

kumāra + sU pac + tiP

The symbols indicated by capital letters are what Pāṇini termed it.
Pāṇini has manipulated such symbols for various metalinguistic purposes.
Once they have executed the function they are charged with, they get
deleted by 1.3.9 tasya lopah ‘non-appearance of that which is an it’. The U
in sU and the P in tiP are termed it by rules 1.3.2-3 and are subsequently
deleted by 1.3.9, yielding kumāra + s pac + ti.

Since it-deletion is a fairly regular phenomenon, we shall propose the
following convention.

7. Base-inputs containing items designated as it must undergo it-
deletion. Furthermore, if any new form is introduced either as
a substitute or an addition, it must also be examined for possible
it-deletion.

For further explanations in the derivational history of this string, I shall
take kumāra + s and pac + ti separately. In order to proceed to the next
stage of derivation, we have to scan through the CD.

8. Scanning the CD takes precedence whenever: access to or exit from
a domain is sought; a rule containing a technical term or its denotations
becomes applicable; or a rule application has been accomplished.

When we scan this domain with our string kumāra + s, we find that the
definition aprkta is applicable in case of s. Our scanning for a rule contain-
ing the definitional term aprkta starts with 6.1.1 since there is no domain
which contains it in its governing rule, and the section of the grammar
beginning with 6.1.1 immediately follows the obligatory domain which
yielded this string. Since this scanning did not offer any rule application,
it is necessary to return to the CD.
Aṅga is the next definition. It requires that this string be sent to the aṅga domain which is governed by a rule that contains this definitional term. Scanning through this domain reveals that no rules can be applied, and thus recourse is again taken to the controlling domain, where our string is identified as a pada. This prompts access to our last domain where, by the application of 8.2.66, the s is replaced by rU. After it -deletion of U, the r is changed into h by 8.3.15. Thus r → h and we obtain the terminal string kumārah, a pada.

As is obvious from the preceding discussion, recourse to the CD occurs more than once. This must be the case since this domain contains definition and interpretation rules which signal the direction a particular derivation has to follow. Also whenever the process of reference is triggered, this is the domain which finally resolves problems regarding rule application. It is imperative then that any discussion about the derivational mechanism of this grammar must include precise statements concerning recourse to this domain. I have already outlined conditions under which this domain takes precedence. As far as scanning is concerned, the following conventions apply.

9. Each time recourse is taken to this domain, scanning starts with the first rule and terminates with the last. Also, whenever a particular definition is selected to be in force, all of its denotations, exceptions, together with other operation rules related to it, become operative.

Stage (b) of the preceding derivation poses a procedural question. Our string was sent to the aṅga domain upon the occurrence of the aṅga definition, but there was no rule application. Doesn’t this lack of rule application render this a vacuous step? We have to remember here that the definitional device of sending inputs to appropriate domains for possible rule application is a general device. It does not guarantee rule application in every case. However, failure to observe this convention necessarily involves risks. For example, let us take the derivational history of kumāri 'girl' which underlies the same base-input and accordingly is sent to the same interior domain of 4.1.1. Rule 4.1.2 does not apply to this since our intent is different. Instead, 4.1.20 prescribes the feminine suffix NiP. After it-deletion we are left with the string kumāra + i, which is identified as an aṅga. When prompted access to the aṅga domain, 6.4.148 applies and causes deletion of the terminal a in kumāra. Incidentally, 6.4.148 is contained in the interior domain headed by 6.4.129 bhasya. Does our string meet the requirements of being called a bha? This again is an instance where only recourse to the process of reference could resolve the problem. That is, tracing the term origin bha would lead us to the CD where 1.4.18 will furnish the required information. The output at this stage is kumār + i = kumāri.

This output is sent to the 4.1.1 domain and 4.1.2 results in the selection
of sU which undergoes it-deletion. The s is then defined as an aprkta and is finally deleted by 6.1.68. After all regular steps are taken with kumāri and the absence of any further rule application noted, it is recognized as a pada. It is interesting to note here that the 4.1.1 domain offers derivative choices to its inputs in such a way that if the option offered by 4.1.2 is not used by the base-inputs, the later options would yield an output that will have to be sent to this domain again (of course, after all operations regarding those choices have been exhausted). The choices are sUP, feminine and taddhita (patronymic) affixation. By the way these choices work, one is tempted to draw a parallel with the cyclic application of T-rules in the transformational-generative (TG) grammar. Understanding fully well that one cannot find a real parallel between the TG and the Pāṇinian model, this aspect of derivative choices is intriguingly close. However, there is one significant difference. In Pāṇini, inputs which do not opt for the 4.1.2 choice definitely will have to return to this interior domain again after operations relating to subsequent choices have been exhausted. Unlike this, a TG rule cycle may or may not predict such an operation.

Let us now return to stage (c) of our verbal pada pacati. Here, after the it deletion of P, 3.4.113 tinēti sārvadhātukaṃ applies and thus, ti gets the designation sārvadhātuka. As opposed to the global definitions contained in the CD, this is a local definition and hence, it must have local application. As we can see in the derivational history of this form, 3.1.68 kartari śap applies. The result of this rule application is the insertion of ṣaP between pac and ti. The rest is easy because pac + a + ti → pacati itself becomes the terminal string in the absence of any further rule application.

Rules 3.1.68 and 3.4.113 are both contained in the same interior domain, yet 3.1.68, which is listed earlier, applies later. How do we know that we have to resort to reverse scanning and that too in the same domain? If 3.1.68 applies later, why didn't Pāṇini put it at the end of the domain? To answer the second question first, we can say that the Pāṇinian rule ordering is based on both extrinsic as well as intrinsic principles. Furthermore, rule ordering is sensitive to specific operations and desired derivational results rather than the seriality involved in their placement. The first question appears to be difficult but actually is very simple to answer. We have already seen how tiN replacements of LA relate to various sections of the grammar. Actually the terms karty in 3.1.68 and sārvadhātuka in 3.4.113 are interrelated. They both are joined with the context of LA replacement and tiN selection. Explaining how we reach 3.1.68 from 3.4.113 is again the subject matter of the referential indices. In accordance with the convention we have already discussed, the term origin sārvadhātuka must be traced. It is interesting to note that for the application of 3.1.68, sārvadhātuka is one of the required conditions.

It has been explained in connection with the selection of sUP and tiN
that proper selection requires retrieving necessary information from elsewhere by means of referential indices. Sūtras brought close to the context of rules 4.1.2 and 3.4.78 share a surprisingly high degree of interdependency. It establishes beyond doubt that the selection of sUP and tiN is made not only with reference to each other but also with reference to the CS of sentences. The following flow chart reveals some important aspects of this interdependency.

10.

---

**Key:**

\(v_1\) verb transitive

\(v_i\) verb intransitive
Note here that interdependency is relatively more abstract on the higher level. For example, kāraka categories are basically abstract. The LA affixes are comparatively less abstract. The denotata of the kārakas are expressed by means of vibhaktis and other affixes. The LA affixes are similarly destined to be replaced by tiN. Pāṇini formulates 2.3.1 anabhīhitē to safeguard against multiple expression of syntactic relations. It also serves as a device to indicate derivational options available to a string. The question now arises whether a sUP, tiN or some other affix should first express a given kāraka relation. It is my understanding that a nominal ending does not have a choice of expressing a given kāraka relation first. This understanding is based on the following two points.

11. The Pāṇinian derivational schema operates with reference to the CS of sentences. Since the central denotatum of a sentence is action and also since action is denoted by a verb root, it alone has the first option of expressing a kāraka relation.

12. The restriction of 2.3.1 anabhīhitē is imposed upon the selection of sUP. Naturally, sUP cannot avail itself of the first option to express a given kāraka relation.

I shall now discuss the derivational history of five taddhita derivates which illustrates the complexity of derived nominals and reveals some interesting aspects of the Pāṇinian derivational system.

13. gārgīṭha ‘direct descendant of Garga’

(a) garga → 1.2.45 arthavat...
       4.1.1 nyāp...
       4.1.76 taddhitāḥ
       4.1.82 saṃarthānām...
       4.1.83 pṛāg dividya’ñ
       4.1.95 atā iṅ
       4.1.92 tasyāpatyam
       = garga + ās + iṅ

(b) garga + ās + iṅ → 1.2.46 kṛttaddhita...
       2.4.71 suṣo...
       = garga + (ās → Ø) + iṅ
       = garga + iṅ

(c) garga + iṅ → 1.3.3 halantyam
       1.3.9 tasya
       = garga + i(ṅ → Ø)
       = garga + i

(d) garga + i → 1.4.13 yasmāt...
       6.4.1 aṅgasya
       6.4.129 bhāsyā
       6.4.148 yasyeti ca
       = garg(a → Ø) + i
       = garg + i
(e) garg + i  \[\rightarrow 7.2.117 \text{taddhitesu...} \]
\[\# 1.1.1 \text{trddhir...} \]
\[= g(a \rightarrow ã) rg + i \]
\[= \text{gārgi} \]

(f) gārgi  \[\rightarrow 1.2.46 \text{kṛtaddhita...} \]
\[4.1.1 \text{nīp...} \]
\[4.1.2 \text{svaujas...} \]
\[= \text{gārgi} + sU... \]
\[= \text{gārgiḥ} \]

The affix iN in the above derivation has been introduced after garga + Ñas, a pada. This may not seem proper in view of 4.1.1 which serves as a heading rule (adhikāra) in rules dealing with taddhita affixes. Normally one would expect a nominal stem, or a form ending in feminine affix (Nī, āP), to be the input. The requirement that a pada should form the input is laid down by 4.1.82 samarthānām prathamā vā where samartha refers to a syntactically related pada. That this pada should end in the genitive is inferred from the variable reference (tasya of 4.1.92 tasyāpatyaṃ). This rule also specifies the denotatum of affix aN to which iN is an exception. Incidentally, since a nominal pada is derived by introducing sUP after a nominal stem, and the introduction of sUP is made by 4.1.2 which is governed by 4.1.1, the question of an improper input for affix iN does not arise.

The derivation of gargā + Ñas is not shown here because that string is inferred from 4.1.92. Rule 4.1.82 specifies that relevant affixes are to be introduced after the first among the syntactically related paddas. What constitutes the second pada? The answer is apatya + sU, an inference again based on 4.1.92. This rule allows the introduction of an affix after the first among the syntactically related paddas. That is, the affix must be introduced after gargā + Ñas, and not after apatya + sU. What if one switches the order? Can the affix be introduced after apatya + sU of apatya + sU + gargā + Ñas? No, since the relative order of syntactically related paddas is given by 4.1.92 itself. Since tasya in 4.1.92 tasyāpatyaṃ is referenced first in the rule, its antecedent, i.e., a pada ending in genitive, alone should be treated as the first pada. The application of other rules in the derivation of gārgiḥ is easy to follow.

The word gārgiḥ refers to a direct (anantara) descendant of gargā. A non-direct descendant such as a grandson, etc., is referred to as gotra (4.1.162 apatyaṃ pautraprabhṛti gotram). A gotra descendant of gargā is (14) gārgya. It is derived by introducing the affix yaN (4.1.105 gargādibhyo yan) after gargā + Ñas, a pada syntactically related to apatya + sU. Rules similar to those used in deriving gārgiḥ apply in deriving gārgyaḥ from (garga + Ñas + yan) + sU. The following is the derivational history of gārgi, a female descendant of gargā.
15. gārgī

(a) gārgya → 1.2.46 kṛttaddhita...
    4.1.1 niyāp...
    4.1.3 striyām
    4.1.16 yaṇaś ca
    = gārgya + NiP

(b) gārgya + NiP → 1.3.3 halantyam
    1.3.8 laśakv...
    1.3.9 tasya...
    = gārgya + (N → ɸ) i(P → ɸ)
    = gārgya + i

(c) gārgya + i → 1.4.13 yasmāt...
    6.4.1 aṅgasya
    6.4.148 yasety ca
    = gārgy (a → ɸ) + i
    = gārgy + i

(d) gārgy + i → 6.4.150 halas taddhitasya
    = gārg (y → ɸ) + i
    = gārgī

(e) gārgī → 1.2.46 kṛttadhitya...
    4.1.1 niyāp...
    4.1.2 svaujas...
    = gārgī + sU

(f) gārgī + sU → as in (2) kumārī
    = gārgī + (sU → ɸ)
    = gārgī

The derivational history of gārgi offers nothing new, especially when one compares it with gārgiḥ and gārgya. However, some interesting conclusions can be drawn as a result of this comparison. I shall return to these conclusions after one more derivation.

16. gārgyāyanaḥ ‘a young male gotra descendant of garga’

(a) gargya → same as in gārgya
    = gārgya

(b) gārgya → 4.1.1 niyāp...
    4.1.82 samarthānām
    4.1.93 tasyāpatyam
    4.1.94 gotrād yūny astriyām
    4.1.162 apattyaṃ pawtraprabhṛti...
    4.1.163 jīvati tu vamāye yuvā
    4.1.101 yaṇiṇoś ca
    = gārgya + phaK

(c) gārgya + phaK → same as in step (b) of gārgya
    = gārgya + pha (K → ɸ)
    = gārgya + pha
(d) gārgya + pha → 1.4.13 yasmāt...
   6.4.1 angasya
   6.4.148 yasyeti ca
   = gārgy (a → 0) + pha
   = gārgy + pha

(e) gārgy + pha → 7.1.2 āyaneṇīṇī...
   1.3.10 yathāsamkhyan...
   = gārgy + (pha → āyana)
   = gārgyāyana

(f) gārgyāyana → as in steps (e-f) of gārgīṅ
   = gārgyāyana + s

(g) gārgyāyana + s → same as in (b-d) of kumāraḥ
   = gārgyāyanah

(h) gārgyāyanah → 8.4.2 aṭkupu...
   = gārgyāya (n → n) aṅ
   = gārgyāyanah

The application of rules in gārgyāyanah is relatively complex. The affix phaK is introduced to denote yuvāpatya ‘young gotra descendant’ (recall that gotra refers to grandsons, etc., cf. 4.1.162). A yuvāpatya is also a gotra descendant though with certain restrictions. Garga’s sons, for example, will be gārgīṅ and their sons will be referred to as gārgya. The sons of a gārgya will also be called gārgya, signifying gotra descendants of garga. However, a gotra descendant can be referred to as yuvāpatya when his father or uncles, etc., (vamśya), are alive (4.1.163 jīvati tu vamśye yuvā). The yuvāpatya designation can also be extended to a younger brother when the older brother is alive, providing of course that the father and uncles are not alive (4.1.164 bhrātari ca jyāyaśi. Thus, gārgyāyanah is yuvāpatya when gārgya is alive. He can also be called yuvāpatya when his older brother is alive.

Two rules must be discussed in this connection: 4.1.93 eko gotre and 4.1.94 gotrād yūnī astronomā. The first rule states that only one affix should be introduced to denote a gotra descendant. By inference, the base (prakṛti) must also be the first base. That is, an affix denoting a gotra descendant of garga should be introduced after garga, and not after gārgīṅ. The second rule makes an exception with regard to a yuvāpatya. It specifies that an affix denoting a non-feminine yuvāpatya should be introduced after the base which denotes a gotra. Thus, gārgyāyanah is derived by introducing phaK after gārgya, not after garga or gārgīṅ. Note that a feminine yuvāpatya cannot be derived in this manner; one must introduce the feminine affix NiP to derive (17) gārgyāyanī, a female yuvāpatya of garga.

The following is a schematic representation of derivational types already discussed. I have included major rules with corresponding examples for convenience.

1. (4.1.1 (4.1.2)) = kumāraḥ
2. (4.1.1 (4.1.3 (4.1.1 (4.1.2)))) = kumārī
14. (4.1.1 (4.1.2 (4.1.76 (4.1.82 (4.1.92-93)))))) = gàrgyàh
15. (4.1.1 (4.1.2 (4.1.76 (4.1.82 (4.1.92))))) = gàrgih
16. (4.1.1 (4.1.2 (4.1.76 (4.1.82 (4.1.92 (4.1.94)))))) = gàrgyàyànah
17. (4.1.1 (4.1.2 (4.1.76 (4.1.82 (4.1.92 (4.1.94 (4.1.1 (4.1.3)))))))) = gàrgyàyànì

The above conflations, except for the first, have one thing in common: their output must form an input to the first. That is, a derivational cycle beginning at 4.1.1 must complete at 4.1.2. The derivational options offered by 4.1.3 and 4.1.76 are internal to 4.1.1. As a consequence, the derivational cycles beginning with 4.1.3 and 4.1.76 must complete at 4.1.1. Rule 4.1.76 branches off into its own internal options; I have illustrated only one of them by 4.1.82. Rules 4.1.92, 4.1.93 and 4.1.94 offer options internal to 4.1.82. The output of 4.1.76 may technically form an input to 4.1.3 in which case the cycle must again complete at 4.1.1. An internal cycle which completes at 4.1.1 and accepts the option offered by 4.1.2 produces the final derivate. The above schema outlines six options internal to 4.1.1. The first option produces the final derivate. The remaining five options must complete their cycle at 4.1.1. The first option cancels out the other two; the second cancels the third; the third option alone offers a full range of derivational choices.

The above derivational options are built around the nominal stem (prātipadika) as base-input. I have already discussed the derivational history of pacati which takes a verb root (dhātu) as its input. The following derivations are also built around verb roots as base input. Consider pācaka ‘cook’, pācikā ‘female cook’ and kumbhakāraḥ ‘pot maker’.

18. pācaka ‘cook’

(a) pāc
   \[\rightarrow 1.3.1 bhūvādayo...\]
   3.1.91 dhātoh
   3.1.93 krūrāta
   3.1.95 kṛtyāh
   3.1.133 nivūtṛcau
   = pāc + NvuL.

(b) pāc + NvuL
   \[\rightarrow 1.3.3 halantyam\]
   1.3.7 cuṭū
   1.3.9 tasya lopah
   = pāc + (N \rightarrow \emptyset) vu(L \rightarrow \emptyset)
   = pāc + vu

(c) pāc + vu
   \[\rightarrow 1.4.13 yasmāt...\]
   6.4.1 anāgasya
   7.1.1 yuvor anākau
   1.3.10 yathāsaṁkhyām...
   = pāc + (vu \rightarrow aka)
   = pāc + aka

(d) pāc + aka
   \[\rightarrow 7.2.116 ata upadhāyāh\]
# 1.1.1 vṛddhī...  
= p (a → ā) c + aka  
= pācaka

(e) pācaka → same as in kumāraḥ  
= pācaka + sU  
= pācakah

19. pācikā ‘female cook’

(a) pācaka → 1.2.46 kṛttaddhita  
4.1.1 nyāp...  
4.1.3 striyām  
4.1.4 ajādyatas...  
= pācaka + TāP

(b) pācaka + TāP → 1.3.3 halantyām  
1.3.7 cutū  
1.3.9 tasya...  
= pācaka + (T → Ø) ā (P → Ø)  
= pācaka + ā

(c) pācaka + ā → 1.4.13 yasmāt...  
6.4.1 aṅgasya  
7.3.44 prayayaasthāt...  
= pāc (a → i) ka + ā  
= pācika + ā

(d) pācika + ā → 6.1.101 akaḥ savārṇe...  
= pācikā (a + a → ā)  
= pācikā

(e) pācikā → 4.1.1 nyāp...  
4.1.2 svaujas...  
# 1.4.102 supah, etc.  
= pācikā + sU

(f) pācikā + sU → 1.3.2 upadeśe...  
1.3.9 tasya...  
= pācikā + s (U → Ø)  
= pācikā + s

(g) pācikā + s → 1.2.41 aprktā...  
6.1.68 halinyābhhyo...  
= pācikā + (s → Ø)  
= pācikā

(h) pācikā → 1.4.14 suptiṇantam...  
1.1.62 prayyālope...  
= pācikā

The above two forms are derived by introducing the krt affix Nvul after the verbal root pac. The second form is the feminine counterpart of the
first. Rule application in these derivations is fairly straightforward. Deriving \( \text{pācaka} \) from \( \text{pac} \) + \( \text{N}v\text{uL} \) basically entails two operations: replacement of \( \text{vu} \) by \( \text{aka} \) and the \( \text{vyādhi} \) of the penultimate (\( \text{upadhā} \)) \( a \) of \( \text{pac} \). The second form requires the introduction of the feminine affix \( \text{TāP} \) followed by homogenous (\( \text{savarṇa} \)) long vowel replacement for \( a + a \). I shall return to these derivations after a discussion of \( \text{kumbhakārah} \).

20. \text{kumbhakārah}

(a) \( \text{DUkrN} \) \( \rightarrow \) 1.3.1 \( \text{bhūvādayo...} \)
1.3.3 \( \text{halantyam} \)
1.3.5 \( \text{ādirnītuṭuvah} \)
1.3.9 \( \text{tasya...} \)
\( = (DU \rightarrow \emptyset) \text{kr} (\text{N} \rightarrow \emptyset) \)
\( = \text{kr} \)

(b) \( \text{kr} \) \( \rightarrow \) 3.1.91 \( \text{dhātoḥ} \)
3.2.1 \( \text{karmanyāṇ} \)
3.1.92 \( \text{tatropapadam...} \)
\( = \text{kumbha} + \text{ām} + \text{kr} + a\text{N} \)

(c) \( \text{kumbha} + \text{ām} + \text{kr} + a\text{N} \) \( \rightarrow \) 1.3.3 \( \text{halantyam} \)
1.3.9 \( \text{tasya...} \)
\( = \text{kumbha} + \text{ām} + \text{kr} + a \)

(d) \( \text{kumbha} + \text{ām} + \text{kr} + a \) \( \rightarrow \) 1.4.13 \( \text{yasmat...} \)
6.4.1 \( \text{aṅgasya} \)
7.2.115 \( \text{aco’nimiti} \)
\( = \text{kumbha} + \text{ām} + k (\text{r} \rightarrow \text{ār}) + a \)
\( = \text{kumbha} + \text{ām} + \text{kāra} \)

(e) \( \text{kumbha} + \text{ām} + \text{kāra} \) \( \rightarrow \) 2.2.19 \( \text{upapadam atiṁ} \)
1.2.46 \( \text{kritaddhita...} \)
2.4.71 \( \text{supo...} \)
\( = \text{kumbha} + (\text{ām} \rightarrow \emptyset) + \text{kāra} \)
\( = \text{kumbhakāra} \)

(f) \( \text{kumbhakāra} \) \( \rightarrow \) as in \( \text{kumāraḥ} \)
\( = \text{kumbhakāra} + (\text{sU} \rightarrow \text{ḥ}) \)
\( = \text{kumbhakārah} \)

The derivation of \( \text{kumbhakārah} \) is highly complex. First, its two constituents, \( \text{kumbha} + \text{ām} \) and \( \text{kāra} + \text{sU} \), are combined to produce an obligatory compound. Second, \( \text{kāra} \) is derived by introducing affix \( a\text{N} \) under the condition of a \( \text{pada} \), namely \( \text{kumbha} + \text{ām} \), which denotes karman ‘object’ and serves as an \( \text{upapada} \) ‘co-occurring pada.’ Finally, the complexity of this derivation increases because the rule which derives \( \text{kāra} \) from
DUkrN + aN, 3.2.1 karman\textsuperscript{y} \textit{an}, is contained in the second quarter of the third book. Furthermore, the denotatum of the conjoined \textit{pada} has been specified as \textit{karman}. This necessitates bringing related rules to the context of 3.2.1 karman\textsuperscript{y} \textit{an}.

The process of retrieving related rules begins with the locative singular word karma\textsuperscript{n}i of 3.2.1. This rule is contained within the domain of 3.1.91 dh\textit{ātoh} whose functional context contains 3.1.92 tatrop\textit{papad}am saptam\textit{īstham}. The variable reference tatra specifies that an item in the locative in this domain of 3.1.91 should be construed as an upapada. The obligatory compound of kumbha + ām + kāra is allowed by 2.2.19 upapada atīn. One can now see how the locative in karma\textsuperscript{n}i, with its antecedent upapada and the term karman, brings rules from the kāraka, vibhakti and samāśa sections close to the context of 3.2.1. Since the term upapada in 2.2.19 is referenced with prathamā ‘nominative’, kumbha + ām must be treated as upasarjana ‘secondary’ (1.2.43 prathama\textsuperscript{nīrīśtam) and hence, be placed first in the compound as is required by 2.2.30 upasarjanam pūrvam. The following schema reveals the complexity of this derivation.

\begin{itemize}
  \item karman (1.4.49 kartur; 2.3.2
  \item karma\textsuperscript{n}i dv	extit{ī}tīyā, etc.)
  \item upasarjana (2.2.30 upasarjanam)
    \begin{itemize}
      \item (2.2.19 upapad\textit{a} atīn)
      \item (1.2.43 prathamā)
    \end{itemize}
  \item kar\textit{r} (1.4.54 svatantrah)
  \item karman (3.2.1 karman\textsuperscript{y} \textit{an})
  \item upapada (3.1.92 tatrop\textit{papad}am)
  \item kar\textit{r} (3.4.67 kartari)
  \item samāśa (2.1.4 prāk)
    \begin{itemize}
      \item (2.1.1 samarthaḥ)
      \item (2.1.22 tatpuruṣaḥ)
      \item (2.2.19 upapad\textit{a}m)
      \item (2.2.30 upasarjanam)
      \item (1.2.46 kṛtaddhita)
      \item (2.4.71 su\textit{po})
    \end{itemize}
  \end{itemize}

= kumbhakāraḥ

It should be remembered here that affix aN is a krt and as such is introduced to denote kar\textit{r} ‘agent’. The first constituent of the compound kumbhakāra denotes karman ‘object’. These relations are both inherent in the compound. The action with reference to which karman and kar\textit{r} are expressed is, of course, denoted by DUkrN. Now recall the derivation of pācakāḥ with underlying verbal root pac after which affix NuvuL is introduced.
Since *Nvul* is a *krt* affix, it too denotes *kartr*. The derivational history of *kumbhakāraḥ* and *pācaḥ* shows that they inhere diverse syntactico-semantic relations. This is further proof of the effectiveness of referential indices in resolving problems encountered in complex derivations.

It should be obvious by now that derivations may relate to sentences or sentence-like strings. I have already discussed the derivation of *putriyati*, *rājapuruṣaḥ* and *kumbhakāraḥ* where the first two are optional and the last obligatory. The *putriyati* can be used optionally with the sentence *ātmanah putram icchati* and *rājapuruṣaḥ* can be used alternately with the sentential string *rājaḥ putraḥ* *Kumbhakāraḥ* however, is obligatory involving an *upapada*.

Pāṇini also discussed many derivations which involve sentences relatable to each other. Consider for example the following rules.

1.4.51 *akathitam ca*

’a kāraṇa not yet assigned any one of the other names is also assigned the name *karman’*

1.4.52 *gatibuddhipratyavesanārthaśabdakarmākarmakānaṃ ani kartā sa nau*

‘the agent of a non-Nic action having the signification of *gati* ‘movement’, *buddhi* ‘perception’ or *pratyavesaṇa* ‘consuming’, or having *śabda* ‘sound’ as its object, or having no object at all is termed *karman* when the same root terminates in *NiC’*

1.3.53 *hykor anyatarasyaṃ*

’a kāraṇa which serves as the agent of *hyk* ‘to carry’ and *DUkNi* ‘to make’ not used with *NiC* optionally is termed *karman* when used with *NiC’*

1.4.55 *tatprayojako hetuś ca*

’a kāraṇa which serves as *prayojaka* ‘instigator’ of the agent, in addition to being a *kartya*, is termed *hetu* ‘cause’

Let us consider some examples.

21. *devadattah pāninā kamsapātyāṃ gām dogdhi payah*

‘Devadatta is milking the milk by hand in a copper vessel’

22. *devadattena pāninā kamsapātyāṃ gauḥ payo duhyate*

‘Cow’s milk is milked by hand in a copper vessel by Devadatta’

23. *devadattah ajām grāmām nayati*

‘Devadatta is bringing the goat to the village’

24. *devadattena ajā grāmām nīyate*

‘The goat is taken to the village by Devadatta’

25. *mAṇavakaḥ dharmam budhyate*

‘The boy understands the duty’

26. *mAṇavakena dharmo budhyate*

‘The duty is understood by the boy’

27. *devadattah mAṇavakam dharmam bodhayati*

‘Devadatta makes the boy understand the duty’
28. *devadattena māṇavakaḥ dharmaḥ bodhayate*
   ‘The duty is made known to the boy by Devadatta’
29. *devadattena māṇavakam dharmaḥ bodhayate*
   ‘id.’
30. *devadattaḥ yajñadattaṁ grāmam gamayati*
   ‘Devadatta has Yajñadatta go to the village’
31. *devadattena yajñadatto grāmam gamyate*
   ‘The village is gone to by Yajñadatta at the instigation of Devadatta’
32. *devadattaḥ māsam āsyate*
   ‘Devadatta stays (here) for a month’
33. *devadattena māsaḥ āsyate*
   ‘id.’
34. *devadattena māsam āsyate*
   ‘id.’
35. *devadattaḥ yajñadattam māsam āsayati*
   ‘Devadatta has Yajñadatta stay for a month’
36. *devadattena yajñadatto māsam āsyate*
   ‘Yajñadatta is caused to stay for a month by Devadatta’
37. *devadattena yajñadattam māsam āsyate*
   ‘id.’

The above sentences distinguish five types of sentential relations: non-causal active, causal active, non-causal passive, causal passive and impersonal active. These categories are illustrated by 23, 27, 24, 28 and 34 respectively. They all involve one action each, though the transitive actions involve two-place objects, a direct and an indirect one. The causal actions similarly involve two-place agents, an instigator (*prayojaka*) and an instigated (*prayojya*). Sentences 25 and 26 are non-causal active and passive respectively. I have already indicated in connection with *kumāreṇa pathyate* that LA replacements in *tiN* share a dependency relationship with *up*.* An extracted representation of this dependency will greatly enhance our understanding of the above examples.

The LA replacements of *tiN* termed *ātmanepada* offer three choices: denoting either an agent, object or *bhāva*. Conversely, the *parasmaipada* replacements can only denote two: agent and object. Actions denoted by an intransitive root do not denote an object except for cases specified otherwise. For example, *māsa* ‘month’, an item denoting *kāla* ‘time’, in sentences 32-34 is treated as the object of a seemingly intransitive action denoted by *ās* ‘to stay’. The verbal form *āsyate* in sentences 33-34 denotes object and *bhāva* respectively with *te*. Thus, given an abstract representation of sentences 32-34 as *devadatta* (agent) *māsa* (object) *ās* (current action), we can introduce LAT to be replaced subsequently by the *ātmanepada* ending *te*. It is at this time that one must choose whether one wants to express agent,
object or bhāva by means of the verbal ending. Once this choice is made, the sUP endings can be selected to express either the agent or the object which has not been expressed elsewhere. For example, sentence 32 denotes agent by te. Consequently, devadattaḥ denotes the nominal stem notion (prātipadikārtha). Since the karmān is left unexpressed, māsa takes the accusative ending am to express it. Sentence 33 expresses the object with ya of āsyate. As a result, the agent is to be expressed with the sUP in devadattaṃ. The nominative in māṣaḥ on the other hand, expresses the nominal stem notion. Sentence 34 expresses both the agent and the object with the sUP. This becomes necessary because of the verbal form āsyate which is expressing bhāva.

The Mahābhāṣya discusses some ślokavārttikas (ad 1.4.51; I, 264 ff.) which outline views concerning the denotatum of LA. Nāgeśa (Udyota ad 1.4.51; I. 270) summarizes them as follows.

38.  gauṇe karmāṇi duhyādeḥ pradhāne nihṛkṛṣṭvahāṁ, buddhībhakṣyārthayoh āśādakarmaṇām ca niṣecchayā prayojyakarmany anyēṣāṁ nyantānām lādayo matāḥ hṛkror niṣecchayā kim vā prayojye bahudāriśbhiḥ

‘A LA replacement denotes the secondary object in case of verbal roots ṅuh ‘to milk’, etc. It expresses the primary object in case of nī ‘to lead’, hṛ ‘to carry’, kṛṣ ‘to drag’ and vah ‘to carry’. In case of the causatives of knowing and consuming, and also verbs having sound as their object, the LA expresses whatever one desires. The LA expresses prayojyakarmany ‘prompting agent termed object’ in case of the other causatives. However, with the causatives of nī, hṛ and kṛṣ they are expressed by LA as one desires...’

The above verse clearly emphasizes the importance of usage and interpretation (vyākhyāna) in determining the denotatum of tiṇ, especially in relation to causal and non-causal verbs having dual objects. Consider the causative sentences 35 and 36. The following is their abstract representation.

devadatta (causal agent) yajñadatta (causal object)
māsa (object denoting time) ās (current causal action)

The affix LAT is introduced here after ās with reference to current time. Since one may choose to express either the agent, object or root sense, a selection of tiṇ to express one of these will require the introduction of sUP to express the other two. Thus tiṇ expresses the causal agent and the causal object in 35 and 36 respectively. As a result, we get the accusative ending am after yajñadatta and māsa in 35 to express the object. Similarly a choice to express the causal object with tiṇ in 36 requires that the causal agent and the object denoting time be expressed by sUP. A choice to express bhāva with ya will yield 37 where the causal agent and the two objects as well have to be expressed with a sUP.
Sentences 30 and 31 illustrate instances of a causal active and its corresponding passive with two-place objects. The causal object is expressed with the verb in 31. This obviously leaves the causal agent to be expressed by the instrumental ending țā. The accusative am similarly is required after grāma. Sentences 25 through 29 involve an action denoted by budh. This root requires the introduction of ātmanepada endings which, in turn, may denote either agent, object or bhāva. Sentence 25 is active, 26 passive. Sentences 27 and 28 are causal active and passive where 27 expresses the agent with ți. This leaves both objects to be expressed by the accusative am. Sentences 28 and 29 both express the object with ya. This, however, they do in turn. That is, 28 expresses the causal object with țiN and the regular non-causal object with sUP. The case is reversed in 29. Sentences 23 and 24 allow the agent or the object to be expressed with țiN. Since ni involves a two-place object, the question whether the passive expresses the primary or the secondary object with the verb is encountered. As is clear from 24, only the primary object should be expressed with te. Sentences 21 and 22 illustrate the fact that the secondary object (gauh) alone can be expressed by the passive form of duh. In summation, the above sentences illustrate that their derivations are linked at certain steps in their derivational history via choices relative to the denotata of țiN.

The preceding description centres around two basic facts: that verbal endings may express agent, object or bhāva depending upon whether the verbal root is transitive or intransitive, and that sUP endings, among other things, are used to express agent and object if they have not already been expressed by the verbal ending. Furthermore, transitive actions with dual objects pose a problem. Should the verbal endings express the primary or secondary object? The summary verse cited from the Udyota of Nāgeśa presents the guidelines. It also illustrates how sentence types with two-place objects can be derivationally related.

Pāṇini, too, has discussed how to relate sentential types involving two-place actions. All the above examples involve a single action except for the causatives which may be viewed as involving two-place actions, i.e. causal action and its non-causal counterpart. For an understanding of how sentences involving two-place actions are derived, consider the following examples:

39. sthālyām odanām pacantarīv devadattam paśyāmi
   'I see Devadatta cooking rice in a pot'

40. tiśthan mūtrayati yavanaḥ
   'The Ionian is urinating while standing'

41. daksinena ced yāyān tarhi na śakaṭam paryābhavet
   'The cart would not turn over if he goes by the Southern side'

42. odanām bhuktavā grāmam gacchati devadattaḥ
   'Devadatta goes to the village after having eaten the rice'
43. **odanam bhuktvā grāmo gamyate devadattena**
   ‘The village is gone to by Devadatta after having eaten the rice’

44. **devadatto grāman gantum icchati**
   ‘Devadatta wishes to go to the village’

45. **devadattena grāmo gantum isyate**
   ‘The village is wished to be reached by Devadatta’

The above are but a few instances of sentences with two-place actions. The problems encountered in deriving them are twofold: specifying the signification of linguistic elements introduced, and outlining constraints relative to the denotatum of grammatical categories such as the agent and the object. All the above sentences entail sentence-like structures mainly due to the involvement of dual actions. Thus sentences 39 and 40 involve two sentences each.

46. **yavanah tiṣṭhāti**
   ‘The Ionian is standing’, and

47. **yavanah mūtryati**
   ‘The Ionian is urinating’; as well as

48. **devadattaḥ sthāyāṃ odanam paccati**
   ‘Devadatta is cooking rice in the pot’, and

49. **aham devadattaṃ paśyāmi**
   ‘I see Devadatta’.

The derivation of 39 is allowed by 3.2.126 lakṣaṇahetvoh kriyāḥ which states that affixes Ṣatṛ and Ṣānac are introduced as replacements for LAT providing one action marks another or one action serves as hetu ‘cause’ for another action. The action denoted by sthā ‘stand’ marks the action denoted by mūtrya ‘urinate’. As a result, sthā + LAT yields sthā + Ṣatṛ where Ṣatṛ is a replacement for LAT. Sentence 40 involves the introduction of the affix Ṣatṛ as a replacement for LAT providing LAT (Ṣatṛ) does not occur in syntactic co-ordination with an item ending in the nominative. Thus, given the sentence devadattaṃ paśyāmi which is derived from devadatta + am + dṛṣ + LAT, the affix Ṣatṛ can be introduced after dṛṣ under the condition of a syntactic co-ordination with devadatta + am. Sentence 41 is derived by introducing the affix LIN after verbal roots denoting hetu ‘cause’ and hetumat ‘effect’ (3.3.156 hetuhetumator liṅ). This clearly requires two actions such that one may serve as the cause for the other. Going by the southern side here serves as the cause for the cart’s safety, the effect.

Sentences 42 through 45 involve the introduction of affixes Ktvā and tumUN where 43 and 45 are the passive counterparts of 42 and 44. The introduction of Ktvā entails two actions such that one is prior and the other subsequent. Ktvā is introduced after the verbal root which denotes the prior action providing both actions share the same agent (3.4.21 samānakartika-yoh purvaṅkāle). Sentence 43, the passive counterpart of 42, expresses the object by te. The object of bhuj ‘to consume’ is expressed by am. Recall here that a distinction between primary and secondary objects was made in
connection with our discussion of two-place objects. Such a distinction was also maintained between primary and secondary actions in connection with the discussion of two-place actions. Consider, for example, sentences 41 and 45 where the action denoted by īṣ ‘to wish’ is primary as opposed to the secondary action denoted by gam. The kartr of both these actions is denoted by ti of the primary action. Consequently the object of gam, grāma, is expressed with am. The verbal form īsyate expresses the object of both the actions in sentence 45. As a result grāma takes the nominative rather than the accusative or dative. This is only logical since grāma is the object of gam while both grāma and gantum are the objects of īṣ (see Mbh. ad 3.4.26 svādumi namul; II. 251-52). These additional examples reinforce our observations.

50. devadatto grāmam jīgamiṣati
‘Devadatta wishes to go to the village’

51. devadattena grāmo jīgamiṣyate
‘The village is wished to be gone to by Devadatta’

Now consider 3.1.7 in relation to sentences 44 and 45.

3.1.7 dhātoḥ karmanah samānakartṛkād icchāyāṃ vā
‘The affix saN optionally is introduced after a verb root which underlies the object of and has the same agent as īṣ.’

As has already been stated, gantum is the object of īṣ. The root which forms part of this object is gam. Rule 3.1.7 can introduce the affix saN after this root to ultimately derive the form jīgamiṣati. If the form which ends in affix tumUN is not treated as the object referenced with the karmanah of 3.1.7, jīgamiṣati can never be derived. Note here that the condition of samākartaḥcā ‘same agent’ imposed by 3.1.7 is shared by 3.3.158 samānakartaḥkeśu tumun. The affix tumUN occurring in sentences 44 and 45 is introduced by 3.3.158. Since sentences 44, 50, 45 and 51 derive as alternants, the constraint of samānakartaḥcā should not be treated merely as an accident. It is directly related to the Pāṇinian schema for relating sentences.

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1Deshpande (1980) presents an excellent discussion of the syntax of tumUN, although his claim that the Indian grammatical tradition starting with Patañjali up to the VP of Bhartṛhari was unaware of the solution to problems concerning the syntax of tumUN is at best debatable. There are references in the tradition which trace the origin of Bhartṛhari’s solutions to the Mahābhāṣya. See, for example, Laghusābdaratna, II:646: idaḥ ca svādumi namul (3.4.26) ītī sūtre bhāṣye spaśtam. tatratya bhāṣyārthānubādityau ceme harikārīke ity anyatra prapañcitam. ‘This has been made clear in the Mahābhāṣya on rule 3.4.26 svādumi namul. These two kārikā verses of Bhartṛhari reiterate the content of the Mahābhāṣya. This has been expatiated elsewhere.’ Nevertheless, Deshpande deserves credit for a refreshingly thorough study.
Derivation of Compounds

The following is an outline of the domain under which Pāṇini discusses Sanskrit compounds.

2.1.1 samarthas padavidhiḥ
2.1.3 prāk kaḍārāt samāsah
2.1.4 saha supā
2.1.5 avyayibhāvaḥ
2.1.21 anypadārthe ca samjñāyām
2.1.22 tatpurusāḥ
2.2.22 kvā ca
2.2.23 bahuvrihiḥ
2.2.28 tena saheti tulyayoge
2.2.29 cārthe dvandvāḥ
2.2.30 upāsarjanam pūrvam
2.2.38 kaḍārāḥ karmadhāraye

Before discussing generative conventions employed in deriving Sanskrit compounds, some generalized constraints implicitly assumed or explicitly stated by Pāṇini should be explained. Compounds come under the structural domain of padavidhi, a cover term for constructions which result by integrating two or more fully inflected and syntactically related words. That is, padavidhi is a grammatical operation whereby units ending in inflectional endings sUP or tīN can be integrated to yield a single unit. Since units ending in a sUP or tīN are always used as elements in a sentence, padavidhi is a syntactic operation and hence, diverse syntactico-semantic relations must fall within its scope.

In order to delimit the scope of padavidhi, Pāṇini proposes rule 2.1.1 samarthas padavidhiḥ as a metarule of interpretation (paribhāṣā). Patañjali, in his Mahābhäṣya, discusses various questions related to this metarule in great detail. For our purposes, we can make the general assertion that 2.1.1 specifies that padavidhi must meet the condition of sāmarthyā ‘fitness, capability’. This single condition has been variously interpreted. For example,

(1) rājan + ṇas puruṣa + sU

is a string of two nominal padas where rājan ‘king’ and puruṣa ‘man, servant’ are two nominal stems (prātipadika) ending in ṇas (genitive) and sU
(nominative) respectively. If treated as input to padavidhi, this string will yield a single integrated unit.

(2) rājapuruṣah 'king’s man'.

In the absence of integration, the string will yield a construct of two units.

(3) rājñah puruṣah 'king’s man'.

Since both the integrated and non-integrated units mean the same thing, (3) can be treated as the paraphrase of (2). Pāṇiniyas treat (3) as the vigraha-vākya ‘analysed form’ of the compound (2); both, however, derive from (1).

A distinction is also made between (1) and (3). Grammarians consider (1) an alaukika vigraha-vākya, an analytical form existing only on the theoretical level and not attested by usage. As opposed to this, (3) is considered a laukika vigraha-vākya, an alternant to (2) which is attested by usage. In accordance with the condition of sāmarthya, the capability of (3) is defined as vyapekṣā ‘mutual expectancy’ whereas the capability of (2) is defined as ekārthibhāva ‘emergence of a single integrated meaning’. In essence, padavidhi is a syntactic operation whereby two or more words having a mutual expectancy relationship are integrated to yield a single unit capable of expressing a single integrated meaning.

If two or more units of a sentence cannot be logically construed without each other, they can be regarded as sharing a mutual expectancy relationship. Furthermore, one or one combination of these units may be regarded as pradhāna ‘principal’ while the others are considered as upasarjana ‘secondary’. In sentence

(4) rājñah puruṣo rathena grāmam gacchati

‘The king’s man is going to the village by means of a chariot’,

rājñah puruṣah underlies the viśeṣaṇa-viśeṣya ‘modifier-modified’ relationship which constitutes the logical connection between them. It is also evident from this sentence that puruṣah ‘man’ alone can be most directly related to kriyā ‘action’ which is considered the central denotatum of a sentence. As opposed to this, rājñah, genitive singular of rājan ‘king’, is not relatable to anything else but puruṣah. Hence, puruṣah is the principal element and rājñah is secondary. A compound parallel to rājñah puruṣah is permissible since its constituents share a mutual expectancy relationship. However, consider the following phrase

(5) bhāryā rājñah puruṣo devadattasya

‘King’s wife Devadatta’s man’.

Here, a compound formation of rājñah puruṣah is not permissible since rājñah and puruṣah do not share mutual expectancy and hence cannot be
considered logically connected with one another. Instead, in interpreting (5), one must accept that rājñah is most logically connected with bhāryā while puruṣah is most logically connected with devadatta. In short, logical connection based on mutual expectancy, and not mere juxtaposition or proximity of elements, is one of the primary conditions imposed upon the formation of compounds.

Aside from the issues of logical connection between the constituents of a compound, one also has to consider yet another requirement: the emergence of a single integrated meaning. Let us compare (2) and (3) from the point of view of their signification. A string of uncompounded words, such as rājñah puruṣah, is capable of expressing its total meaning only as the sum of the meanings expressed by its constituents. That is, constituents of an uncompounded string express their meanings cumulatively. The total of the individual meanings expressed by logically connected words can be conveniently labelled the meaning of the uncompounded words. The picture differs, however, when we consider the meaning of compounds. First, a compound unit is only required to express a single integrated meaning. This does not necessarily mean that the meaning must correspond to the total of the meanings of the individual constituents. On the one hand, there are compounds like (2) rājapuruṣah in which the constituent units preserve their individual meanings after integration. Integration of this type has been aptly called ajahat-svārthā 'that which has not abandoned its own meaning'. On the other hand, there are compounds in which individual constituents find no specific expression. Such compounds have been termed jahat-svārthā 'that which has abandoned its own meaning'.

The condition of sāmarthya means that a string of logically connected words qualifies for compounding as long as it yields a single integrated meaning; whether this meaning preserves the meaning of the underlying constituents does not matter. For example, a compound like khaṭvārūḍhah refers to a social renegade fit for contempt. However, the meaning of the parallel uncompounded string, khaṭvām ārūḍhah will simply refer to a person who has climbed into bed.

Rule 2.1.4 saha supā, read with the sUP of 2.1.2 sub āmantrite... and samāsaḥ of 2.1.3 prāk kaḍārāt samāsaḥ, specifies that an item ending in a sUP can be combined with another such item to yield a compound provided only that

(a) a logical connection exists between them, and
(b) that there emerges a single integrated meaning.

This interpretation of 2.1.4 appears to impose two constraints upon the process of compound formation.

(6) Formation of a compound is permissible only when the constituent elements end in a sUP. Since a sUP can only be introduced after a
prātipadika ‘nominal stem’, compound formation is further restricted to only those items which underlie a nominal stem.

(7) Compounds cannot contain more than two constituent ‘words’.

Constraint (6) rules out the formation of compounds from those constituents which end in a tiN. Constraint (7) blocks the formation of a compound which may have more than two constituents. However, this latter is not completely accurate since Pāṇini has proposed rules 2.1.24 anekam anyapadārthe and 2.2.29 cārthe dvandvaḥ which allow the formation of bahuvrihi and dvandva compounds from more than two constituents on condition that the bahuvrihi expresses a meaning other than one expressed by its own constituents and the dvandva expresses the meaning signified by ca ‘and’.

Compound formation of more than two constituents poses yet another problem. If there were, for example, four constituents $X, Y, Z$ and $R$ and a multiple compound were allowed, what would be the mode of combining these constituents? Should we combine them:

(8) simultaneously, or,
(9) two at a time starting on the left, or,
(10) two at a time simultaneously starting on the left and the right and then combining the results of both, or,
(11) two at a time starting in the middle and then moving to the right and finally combining the initial, or,
(12) two at a time starting on the right.

Except for (8) and (10), the other modes involve a three-step compound formation. The implications of such combinatorial modes have been discussed fully in the Mahābhāṣya of Patañjali. I shall examine them briefly in connection with my treatment of bahuvrihi and dvandva compounds. What is important here is to present a few generalized conventions which will aid our understanding of the Pāṇinian derivation mechanism. I shall recall conventions from earlier chapters as needed; conventions directly relevant to compound derivation will be formulated as the discussion proceeds.

The Aṣṭādhyāyī accepts verbal roots (dhatu) and nominal stems (prātipadika) as potential units of input. We can characterize such input as strings of lexical items capable of matching the meaning of the target utterance. Sentence (4) can be analysed as a target utterance consisting of five fully derived padas ‘words’ which, in turn, underlie five elements. The first four words underlie rājan, puruṣa, ratha and grāma which are all technically termed prātipadika. The fifth word, gām is a dhatu ‘verbal root’. Each of these elements must undergo various operations to yield the desired sentence. I shall put aside the question of their matching the meaning of sentence (4) and move directly to the derivational steps.
(13) No string can activate the derivation mechanism of this grammar unless the controlling domain (CD, first book) assigns a definitional term (samjña) to each one of its elements. Strings with assigned terms must go to the obligatory domain (OD, third through fifth books) where they must locate an interior domain for possible rule application.

There is a definite connection between assignment of a term by the CD and locating an interior domain in the OD. Since the OD covers three books and many interior domains, a rule-by-rule scanning to locate a rule that might apply would be a tedious exercise. Pānini, by the implicit device of term assignment, makes locating the desired domain and rules much more economical.

(14) Strings locate domains for possible rule application by examining the governing rules. Thus \( d_i \) is the domain for any string \( s_j \) if \( s_j \) is assigned a term \( t_i \) and \( t_i \) is also contained in the governing rule of \( d_i \).

In view of (14), our string ṛājan (prātipadika) + puruṣa (prātipadika) + ratha (prātipadika) + grāma (prātipadika) + gam (dhātu) must scan the OD to locate the interior domains whose governing rules contain the definitional terms prātipadika and dhātu. As a consequence, ṛājan, puruṣa, ratha and grāma are referred to the interior domain of 4.1.1 ny-āp-prātipadikāt where sup (4.1.2 svaujas...) affixes (3.1.1 pratyayāḥ) are introduced after (3.1.2 paraṣ ca) items termed prātipadika. The selection and placement of a proper sup after ṛājan, puruṣa, ratha and grāma is accomplished through a complex process of retrieving the referential indices of sup which, in turn, brings required rules from the CD and other domains close to the context of 4.1.2 svaujas... . Equally complex procedures must be followed for gam which, after being sent to the domain of 3.1.91 dhātok, first receives the abstract affix \( \text{LAT} \) (3.2.123 vartamāne lat) and then replaces it with a tiN (3.4.77-78 lasya-tiptasjhi... ). The output at this stage becomes: ṛājan + ṇas + puruṣa + sU + ratha + ṭā + grāma + am and gam + Šap + tiP which must follow further steps in derivation outside the OD.

(15) The result of each rule application in the OD or in any other domain must be examined by the CD and further steps in derivation must be taken either by assigning a fresh term or by exhausting operations triggered by terms already received through referential indices or both. It is imperative then that outputs of the OD receive further term assignment from the CD and gain access to other relevant domains following locating procedures as outlined in (14).

Aṅga (1.4.13 yasmāt pratyayāvidhīs...), bha (1.4.17-18 svādisv...-yaci bham) and pada (1.4.14 supṭiṃnāṁ padam) generally are assigned to outputs of the OD for further steps in derivation. These terms facilitate locating the aṅga (6.4.1 aṅgasya through 7.4), bha (6.4.129 bhasya through 6.4.175 rtvavāstrya...) and pada (8.1.16 padasya through 8.3.55 apadaṇṭasya...).
domains. Constituent units of a sentence are termed pada; these are the ultimate units derivable from the grammar. Thus, rājan + Nas, puruṣa + sU, ratha + ṭā, grāma + am and gam + ṣap + tīP individually are termed pada and, after necessary morphophonemic operations, yield rājñaḥ, puruṣaḥ, rathena, grāmam and gacchati. A concatenation of these words will produce the target utterance.

(4) rājñaḥ puruṣo rathena grāmam gacchati.

The first two paddas of this sentence can be replaced by a single pada, rājapuruṣaḥ, with practically no semantic modification. The underlying prātipadika of rājapuruṣaḥ will then be rājapuruṣa, a nominal compound or a complex nominal stem. In order to derive this compound, we must take the output of the OD, i.e. rājan + Nas puruṣa + sU, a string of two logically connected paddas, and send it to the domain of compound formation (2.1.1 through 2.2.38) for integration into a compound. As a consequence, we will get a samāsa ‘compound’ of the tatpuruṣa type which, in turn, will require that rājan + Nas + puruṣa + sU be the fixed order for the constituents of this compound. In view of (15), the CD will examine the compound string and, by its rule 1.2.46 kṛttaddhita-samāśa ca read with 1.2.45 arthavad... prātipadika will assign it the term prātipadika. This will lead to the application of 2.4.71 supo dhātu-prātipadikayoḥ which requires deleting all the sUP affixes contained in a dhātu or a prātipadika. The result of the application of this rule will be rājan + puruṣa which after the deletion of the n becomes rājapuruṣa. It is important to remember here that the CD has termed the compound a nominal stem. Following (14) one might be tempted to take rājapuruṣa to the domain of 4.1.1 ny-āp prātipadikāt for placement of a sUP. However, to submit to such temptation could bring undesired results since operations relative to the assignment of the term samāsa are yet to be exhausted.

(16) If two terms t₁ and t₂ are assigned to a string s₁ such that t₁ is the basis for the assignment of t₂ operations relative to t₁ must take precedence.

This postulate is necessary for compounds because they are assigned the term prātipadika on the strength of the term samāsa. Let us examine the controlled derivation of citraguh ‘he who owns brindled cows’. This is a bahuvrihi compound with two constituent paddas: citrā + Jas and go + Jas. Rule 2.2.30 upasarjanam pūram requires that a constituent termed upasarjana ‘secondary’ be placed first. A referential index (RI) of the term upasarjana brings 1.1.37 prathamānirdiṣṭa...) which explains that an upasarjana is that constituent of a compound which is referenced with prathamā (first sUP triad). However, this cannot resolve our problem since 2.2.24 anekam anyapadārthe, the rule which prescribed this compound formation, references anekam ‘more than one’ in prathamā, and hence both citrā + Jas and go + Jas become upasarjana. It is 2.2.35 saṃtāni viśeṣāṇe bahuvrihau which
decides that citrá + Jas should be placed first since it happens to be a qualifier (viśesāna).

After the string is assigned the term prātipadika, three operations take place. First, 2.4.71 deletes the two Jas affixes thereby reducing the string to citrago. Next, 1.2.48 go-striyor upasarjanasya demands that the o of go undergo short vowel (hrasva) substitution. Application of this rule is seemingly difficult since we do not know what a short substitute of o is. Tracing back the term origin of hrasva brings 1.1.48 eṣ ad hrasva (vādeṣe) which, when read with 1.3.10 yathā-sâmkhya anudeśah samānām, provides u as the proper substitute for o. This yields citragu, a prātipadika (t₂) so designated since it is a samāsa (t₁). Operations relative to t₁ now must be exhausted.

The referential index attached to citragu includes such terms as samāsa, bahuvrihi, upasarjana and prātipadika. In accordance with (14) and (16), strings termed samāsa will gain access to the interior domains of 5.4.68 samāsāntāh and 6.1.223 samāsasya since both these rules contain the definitional term samāsa. Rule 5.4.68 governs a domain which extends up to 5.4.160 nispravāniṣ ca and introduces affixes termed taddhita after certain compounds. Rule 6.1.223 heads a domain which prescribes accent to compounds with the help of rules 6.1.158 anuvṛttām padam ekavarjam and 6.1.159 karsātvato ghaṇo’ nta udāttāḥ brought close to its context by recurrence (anuvṛtti). Since all the rules contained in the second quarter of the sixth book are exceptions or residues of 6.1.223 and a general rule cannot be applied unless its exceptions or residues have been considered, we will have to accept that the domain of 6.1.223 runs through the entire second quarter of book six.

Rule 6.1.158 requires that, except for one syllable, all syllables of an item must be anuvṛttā ‘low pitched’. In the case of compounds, 6.1.223 names the syllable which should be treated as an exception to this general low pitch accentuation. This rule receives the anuvṛtti ‘recurrence’ of the term udāttāḥ ‘high pitch’ from 6.1.158. It also receives the anuvṛtti of an śāh from 6.1.220 anto’ vatāyāḥ. We understand from this that the final syllable of a compound is high pitched; the remaining syllables stay low pitched. However, this is adjusted further by 6.2.1 bahuvrihau prakṛtyā pūrva padam to allow the first constituent of a bahuvrihi compound to retain its original accent. Our example, citragu, will receive high pitch on gu and will be able to retain the original accent on citra. It is clear from the derivation of rājapuruṣa and citragu that the domain of compound rules must be extended to include rules retrieved by referential indices and prompted by term assignment.

The following is a generalized listing of steps involved in deriving Sanskrit compounds.

(17) Under the condition of sāmarthya, logically connected padas gain access to the domain of compound formation for integration.
Since, in many instances, compound formation is optional, 2.1.11 vibhāṣā allows certain strings the option of going through the process of integration or of refraining from it. Strings which meet the conditions of compound formation will yield a compound whereas those that do not will yield target utterances which may or may not be used parallel to compounds with the same meaning.

(18) After the application of rules which allow the formation of a compound, individual constituents are arranged in view of the term upasarjana. The output of this domain is termed samāsa ($t_1$).

(19) When the CD examines the output of (18), a new term, prātipadika ($t_2$), is assigned. Rule 2.4.71 deletes the sUP affixes contained in this prātipadika. Since 2.4.71 is a general rule, its exceptions enumerated in section 6.3.1 through 6.3.139 must also be considered.

(20) After the deletion of sUP, operations relative to the term samāsa are undertaken. For this, the compound string is sent to the interior domain of 5.4.68 samāśāntāḥ. As indicated earlier, this domain may introduce certain affixes after the compound.

(21) Since aṅga is a term assigned by the CD to those strings which undergo affix placement, the output of (20) may be termed an aṅga before the affix, and as a consequence, be sent to the domain constituted by rules 6.4.1 through 7.4.97.

(22) In view of (16), the output of (21) is still a samāsa and hence is required to exhaust the operations triggered by that term. This results in the scanning of the domain of 6.1.223 for assignment of the accent.

(23) The output of (22) is now allowed to undergo operations required of prātipadika, irrespective of the fact that it was originally termed samāsa. The most general operation at this stage is the placement of a sUP. However, this must wait until a proper number and gender is assigned to the compound. This means scanning the 2.4 section of the grammar again.

Steps (17) through (23) illustrate that the derivation of Sanskrit compounds necessarily requires expansion of the main domain. The explicit idea of domain and recurrence joins hands with the implicit device of referential indices in accomplishing the derivations under the general direction of derivative conventions (13) through (16). The step-by-step derivation of compounds is closely related to the placement of domains in the grammar. This becomes more apparent when we look at the following computation of rules corresponding to various steps in a derivation.

(24) Steps (17-18)
2.1.1-2.1.4 (2.1.5-2.1.21) (2.1.22-2.2.22)
(2.2.23-2.2.28) (2.2.29)
2.2.30-2.2.38
Pāṇini, as mentioned earlier, derives Sanskrit compounds with reference to their analysed forms (vigraha-vākya). He establishes four categories of compounds: avyayībhāva, tatpurusa, bahuvrihi and dvandva. However, two more categories, karmadāhāra and dvīgu, Pāṇini treats as subcategories of tatpurusa. Since compounds express a single integrated meaning and include forms which may be labelled principal (pradhāna) and secondary (upasārjana), grammarians have attempted to explain the characteristics of compounds with reference to the prominence of constituent meanings.

The meaning of the first constituent is dominant in avyayībhāva compounds. A tatpurusa compound entails exactly the opposite. In bahuvrihi compounds, no constituent is semantically dominant. Instead, some element outside the constituency of the compound enjoys semantic prominence. As opposed to this, a dvandva compound assigns equal semantic prominence to each one of its constituents.

Avyayībhāva compounds
Avyayībhāva compounds are treated as indeclinables. Pāṇini does not define an indeclinable. Instead, he refers to a class of items headed by svār ‘heaven’ and terms them avyaya ‘indeclinable’. He extends this same designation to avyayībhāva compounds. One can interpret the term avyayībhāva as referring to items which attain the status of an avyaya through compound formation. However, this does not mean that an indeclinable cannot partake in the formation of an avyayībhāva compound. This may appear vacuous, especially when one understands that 2.1.4 saha supā require that the constituents of a compound be padas and indeclinables cannot be treated as padas. It is perhaps in view of this fact that Pāṇini treats avyayas as prātipadikas and thus clears the way for 4.1.1 and 4.1.2 to yield a pada by placement of a sUP. This brings the indeclinables on a par with other units which may qualify for compound formation. In essence, an avyayībhāva compound, just as any other nominal compound, takes a string of two padas $x_n + y_1$ where $y_1$ may be a pada ending in sU (nominative singular) which underlies a prātipadika termed avyaya. The other pada, $x_n$, also a nominal, does
not have to underlie an indeclinable as its \(prātipadika\). Neither does it need to end only in the nominative. Pāṇini has referenced the term \(āvyaya\) in the nominative in 2.1.6 \(āvyayam vibhakti-
samīpa...samṛddhi...\) in order to show that the indeclinable \(pada\) will be termed an \(upasarjana\) and hence placed first in the compound. Let us consider the following derivations.

\[(31) \; x_7 + y_1 = hari + тика + adhi + sU \rightarrow\]

\[adhihāri (harau adhi) 'on Hari'\]

\[(a) \; hari \rightarrow 1.2.45, 4.1.1-2 \text{ (placement of } sUP)\]
\[= hari + тика \rightarrow 1.4.14 \text{ (}\text{pada})\]

\[(b) \; adhi \rightarrow 1.2.45, 4.1.1-2\]
\[= adhi + sU\]
\[= adhi + sU \rightarrow 2.4.82 \# 1.1.37\]
\[= adhi + LUK\]
\[= adhi + \emptyset\]
\[= adhi \rightarrow 1.4.14 \# 1.1.62 \text{ (}\text{pada})\]

\[(c) \; hari + тика + adhi \rightarrow 2.1.1-2.1.4, 2.1.5-2.1.6\]
\[hari + tica + adhi \rightarrow 2.2.30 \# 1/2/43\]
\[= adhi + hari + тика\]
\[adhi + hari + тика \rightarrow 1.2.46, 2.4.71\]
\[= adhihāri + LUK\]
\[= adhihāri + \emptyset\]
\[= adhihāri (prātipadika, samāsa)\]

\[(d) \; adhihāri\]

\[(e) \; adhihāri \rightarrow 1.2.45-46, 4.1.1-2\]
\[= adhihāri + sU\]
\[adhihāri + sU \rightarrow 2.4.82 \# 1.1.37 \text{ (as in } adhi + sU)\]
\[= adhihāri\]
\[adhihāri \rightarrow 1.4.14 \# 1.1.62\]
\[= adhihāri \text{ (}\text{pada})\]

\[(32) \; x_7 + y_1 = gopa + vetica + adhi + sU\]

\[adhihāpa \text{ 'on Kṛṣṇa'}\]

\[(a-d) \; gopa + vetica + adhi \rightarrow \text{same as steps (a-d) of (31)}\]
\[= \text{adhihāpa (prātipadika, samāsa)}\]
\[adhihāpa \rightarrow 1.2.45-46, 4.1.1-2\]
\[= \text{adhihāpa + sU}\]
\[adhihāpa + sU \rightarrow 2.4.82 \# 1.1.37; 2.4.83\]
\[= \text{adhihāpa + am}\]
\[adhihāpa + am \rightarrow 1.4.109, 6.1.107\]
\[= \text{adhihāpam}\]
\[adhihāpam \rightarrow 1.4.14 \text{ (}\text{pada})\]

\[(33) \; x_7 + y_1 = strī + vetica + adhi + sU\]

\[adhistri 'pertaining to women'\]
Derivation of Compounds

(a-d) stri + Ni + adhi \rightarrow same as steps (a-d) of (31)
= adhistri

(e) adhistri \rightarrow 1.2.45-46, 1.2.47
= adhistri

adhistri \rightarrow 4.1.1-2 (same as in (31))
= adhistri (pada)

Steps (a-b) of (31) illustrate the process whereby a string of two padas, hari + Ni + adhi + sU, was obtained. The first pada of this string, hari + Ni, follows the general derivational pattern in that it underlies a prātipadika (1.2.45 arthavād...) which is sent to the domain of 4.1.1, where 4.1.2 offers a set of twenty-one sUP affixes from among which one must be selected. The selection of Ni (locative singular) after hari (similarly, after gopa in (32) and stri in (33) was accomplished with the help of referential indices and the kāraka-vibhakti (1.4:2.3) sections of the grammar. The second pada, adhi + sU, underlies an indeclinable which, in turn, causes LUK deletion of sU by rule 2.4.82 avyayād āp-supaḥ:

‘LUK (zero) is ruled as a substitute in place of āP (feminine affixes CāP, TāP, and DāP) and sUP which occur after an indeclinable (avyaya).’

According to 2.1.1 samarthaḥ padavidhiḥ, integration requires padas as inputs. Rule 1.4.14 sup-tīṇantam padam states that only those items which end either in a sUP or a tiNi may be considered padas. The sU of adhi in (31) was deleted. Can adhi still be called a pada? The answer is ‘yes’, since 1.1.62 pratyaya-lope pratyaya-lakṣaṇam states that operations relative to an affix take place even though the affix has been deleted. The compounds derived above are allowed by rules 2.1.5 and 2.1.6.

2.1.5 avyayibhāvaḥ ‘avyayibhāva’


In our example, adhi has been used in the sense of locus. Since 2.1.6 references the term avyaya in the prathamā ‘nominative’, adhi will have to be placed first (2.2.30 upasarjanaṁ pūrvam). The string adhi + hari + Ni, has three terms assigned to it: samāsa, avyayibhāva and upasarjana. Now the
term ṭṛātipadika (1.2.45-46) becomes applicable and 2.4.71 supo dhātu... causes the LUK deletion of ṇi, thus reducing the string to adhihari. Similar steps must be followed in deriving compounds such as (32) adhigopa and (33) adhistri.

We have left step (d) of (31), etc., with no indication of any rule application. Actually, (31) adhihari, as well as (32) and (33), must go through step (d), which requires the scanning of the samāśānta (5.4.68) and accent sections of the grammar. I shall discuss rules relating to placement of accent only when it becomes necessary. The placement of samāśānta affixes must be discussed. Our examples (31-33) did not qualify for affix placement although they did scan the domain of 5.4.68. One cannot question the validity of taking these strings to the domain of samāśānta affixes simply because there was no rule application. We have no way of knowing beforehand what strings may or may not involve the placement of these affixes. Consider the following derivation.

(34) \( x_0 + y_1 = \text{ṣarada} + \text{ḥānas} + upa + sU \)

\[ = \text{upaśaraaam} \text{ near the time of autumn’} \]

steps (a-c) same as in (33)

\( (d) \) upaśarad \[ \rightarrow 5.4.68, 5.4.107 \]

\[ \# 3.1.1-2, 4.1.1, 4.1.76 \]

\[ = \text{upaśarad} + TaC \]

\( upaśarad + TaC \[ \rightarrow 1.3.3, 1.3.7, 1.3.9 \]

\[ = \text{upaśarad} + a \]

Example (34) is similar to (31-33), however, it requires the placement of a samāśānta affix TaC in accord with 5.4.107.

5.4.107 avrayayibhāve ṣarat-prabhrāhībhīyāḥ

“TaC is placed after items headed by ṣarat, etc., when they occur in an avrayayibhāva compound.”

In order to accomplish the placement of affixes such as TaC, we must subject our compound string to access to the domain of 5.4.68 samāśāntāh, which, itself, is an interior domain of 4.1.76 taddhitāh. I must point out here that items which undergo the placement of an affix may qualify for assignment of the term aṅga (1.4.13 yasmāt pratyaśayavidhis...) and consequently may end up scanning the domain of 6.4.1 aṅgasya, even if there is no rule application there. For example, no rule applied to upaśarada, yet the aṅga domain was scanned. An example of affix placement which involves the application of a rule in the aṅga domain follows.

(35) \( x_0 + y_1 = rājan + Nas + upa + sU \)

\[ = \text{uparājan ‘near the king’} \]

steps (a-c) same as in (34)

\[ = \text{uparājan} \]

\( (d) \) uparājan \[ \rightarrow 5.4.68, 5.4.108 \]
Derivation of Compounds

\[ u\text{parājan} + a \quad = \quad u\text{parājan} + TaC \]
\[ \rightarrow \quad 1.1.64, 1.4.13, 1.4.18, 6.4.1, 1.6.4.129, 6.4.144 \]

It is evident from this derivational history that \( u\text{parājan} \) was sent to the domain of 6.4.1 \( an\text{igasya} \) where 6.4.144 \( nas\ taddhite \) became applicable. As a result, the \( tî, \) i.e., \( an \ (1.1.44 \ aco'\ ntyādi tî) \) of an \( n\)-final \( bha \ (1.4.18\ ya\ c\ bha) \), namely, \( u\text{parājan} \), had to be deleted because a \( taddhita \) affix (\( TaC \)) followed. This affix was ruled by 5.4.108 \( anaś ca \) which states that affix \( TaC \) is placed after an \( avyayibhāva \) compound ending is \( an \). Rules 5.4.107-8 place \( TaC \) obligatorily. However, 5.4.109 \( napurnsakā\ anyatarasyāṃ \) 5.4.111 \( jhayāḥ \) and 5.4.122 \( gīrēś ca \) \( senakasya \) make the placement optional when the second member of an \( avyayibhāva \) compound is neuter, or is ‘\( nādī \) river’, \( paurnmāśi \) ‘day of full moon’ or \( āgrahāyaṇī \) ‘day of full moon of the ninth month’. Furthermore, \( TaC \) also is optional when the compound ends in \( jhay \) ‘stops’ or \( gīrī \) ‘mountain’. It is imperative that optional status of placement of \( TaC \) yield a set of two forms, one with \( TaC \) and one without it.

After placement of the \( samāśānta \) affixes, \( an\)ga operations become obligatory. The output of this operation is forwarded to the accent domain for accentuation. It is after the process of accentuation that compound strings become eligible for operations which apply only to \( prātipadika \). One of the most general operations concerning such items is placement of \( sUP \) in the domain of 4.1.1. It should be remembered here that proper selection of \( sUP \) after a nominal stem when an \( avyayibhāva \) compound will still be guided by terms such as \( avyaya \) ‘indeclinable’ and \( napurnsaka \) ‘neuter’. Consequently, the selected \( sUP \) affix can be deleted by 2.4.82 \( avrayād... \) or replaced by \( an \) (2.4.82-84). Some of the preceding derivational details also may prove helpful in understanding the following compound derivations. Common operations regarding \( sUP \) placement or deletion, ordering of constituents, accentuation and obvious phonological changes, unless necessitated by the nature of a given derivation will not be discussed.

(36) Tatpurusa Compounds

The description of \( tatpurusa \) compounds, including its subtypes \( karmadhāra\)ya and \( dvigu \), is contained in the interior domain 2.1.22-2.2.22. The recurrence of 2.1.11 \( vihāsa\ ‘optionally’ \) runs through 2.2.29 \( cārthe dvandvaḥ \). The consequence of this recurrence is twofold.

\( (a) \) Compound formations allowed by rules contained in the set 2.1.12 \( ān\ marya\ddā... \) through 2.2.29 \( cārthe dvandvaḥ \) may be used alternately with their corresponding non-compound strings.

\( (b) \) Compound formations not contained in this set, i.e., those allowed by rules prior to 2.1.11 \( vihāsa\), are obligatory (\( nitya \)).

Since Pāṇini describes compounds with reference to their analysed
forms, it is reasonable to attempt their generation in terms of the $sUP$ they underlie. Let us examine the following derivational history.

(37) $x_2y_1 = kaśṭa + am + śrita + sU$

\[ = kaśṭaśrīta \]
\[ = kaśṭaśrīta + sU \]
\[ = kaśṭaśrītaḥ 'he who has resorted to grief' \]
\[ kaśṭa + am + śrita + sU \rightarrow 2.1.1-4 \]
\[ = 2.1.22 \]
\[ 2.1.24 \]
\[ 2.2.30 \# 1.2.43 \]
\[ = kaśṭa + am + śrita + sU . \]
\[ kaśṭa + am + śrita + sU \rightarrow 1.2.45-46 \]
\[ = 2.4.71 \]
\[ = kaśṭa + LUK + śrita + LUK \]
\[ = kaśṭa + 0 + śrita + 0 \]
\[ = kaśṭaśrīta \]
\[ kaśṭaśrīta \rightarrow \text{accent placement} \]
\[ kaśṭaśrīta \rightarrow 4.1.1-2 \]
\[ = kaśṭaśrīta + sU \]
\[ = kaśṭaśrītaḥ \]

This is a fairly straightforward derivational history. The $kāraka-vibhakti$ sections of the grammar helped rules 4.1.1-2 to place a $sUP$ after kaśṭa and śrita, both $prātipadikas$, to yield kaśṭa + am and śrita + sU. These $padas$ were considered syntactically related and thus optionally were allowed to form a compound by 2.1.24.

2.1.24 $dvitiyā-śrīta-atīta-patita-gata-atyasta-prāpta-āpannaḥ$

"A $pada$ ending in $dvitiyā$ (accusative) optionally can be combined with another $pada$ containing such items as śrita 'resorted to', atīta 'passed', patita 'fallen', gata 'gone', atyasta 'thrown beyond', prāpta 'attained' and āpanna 'reached'."

The term $dvitiyā$ in 2.1.24 is referenced with the nominative ($prathama$), and since items referenced with the nominative mark an $upasarjana$ (1.1.62 $prathama$...), kaśṭa + am was recognized as an $upasarjana$ and placed first in the compound string: kaśṭa + am + śrita + sU (2.2.30). Rules 1.2.45-46 identified the string as a $prātipadika$ to which 2.4.71 applied. Subsequently, am and sU were deleted. The string was thus reduced to kaśṭa-śrīta which, after the placement of proper accent, was ready to accept the $sUP$ placement used in deriving kaśṭaśrītaḥ, a $pada$ containing a samāsa ‘compound’ termed $prātipadika$ ‘nominal stem’.

The recurrence of $dvitiyā$ is carried through 2.1.29 $atyanta samyoga ca$. These rules account for the formation of compounds which are derived
Derivation of Compounds

from strings containing one *pada* in *dvitiya* and the other underlying a nominal stem ending in *Kta*. Pāṇini specifies conditions which allow particular compounds by citing the nominal stems, *suP* or meanings involved. Thus he cites indeclinables such as *svayam* ‘self’ (*2.1.26 svayam ktena*) and *sāmi* ‘half’ (*2.1.27 sāmi*) which may be combined with items ending in *Kta* (*3.2.102 niśṭhā*). He also cites specific nominal stems such as *khaṭva* ‘cot’ as part of a *pada* ending in accusative, although he further restricts the compound formation by imposing a semantic condition *kṣepa* ‘contempt’ (*2.1.26 khaṭvā kṣepe*). Similarly, in *2.1.28 kālaḥ* he identifies the constituents in accusative by citing *kāla* ‘measure of time’ as the general significance of their nominal stems. In *2.1.29*, he cites the general meaning *kāla* but no longer restricts the second constituent to those which contain *Kta*. Instead, he cites another semantic constraint: *atyanta-samyoga* ‘full duration’. These rules are illustrated by: *svayam dharautau* (pādau) ‘feet washed by themselves’, *sāmikṛtām* ‘half-done’, *khaṭvārūḍha* ‘a social renegade’, *māsopramitāś* (candramā) ‘new moon about to start measuring the month by her shape’ and *muhūrtasukham* ‘momentary pleasure’. All these derivations follow the general steps outlined under (17) through (27).

Parallel to instances of *pada* ending in *dvitiyā*, Pāṇini also enumerates instances where words ending in *trīya* (instrumental), *caturtī* (dative), *pañcamī* (ablative) and *saptamī* (locative) can be combined with other *pada*. For example, words ending in *trīyā* (*2.1.30 trīyā tatkrārthena guṇavacana*) can be combined with items containing *artha* ‘wealth’ or items signifying qualification (*guṇavacana*) ascribed to them (tatkrārtha). In addition, a *pada* ending in *trīyā* can also be combined with another *pada* which contains a nominal stem in *kṛt* (*3.1.93 kṛd-atinī*) expressing either *kartṛ* ‘agent’ or *karana* ‘instrument’ (*2.1.32 kartṛ-karana kṛtā*...). Examples of these include: *kīrtikāṇāḥ* ‘a person who has but one eye due to (the charge of) a boar’, *dānāyārthah* ‘wealth due to grain’ (*2.1.30*), *māsenapūrvaḥ* ‘prior by a month’, *mātrṣadriḥ/mātrṣamaḥ* ‘like (equal to) mother’, *māṣonam* ‘less by a māsa (a copper coin)’, *vākkalahāḥ* ‘quarrel by word’, *ācāraṇipuṇāḥ* ‘skilful in behaving’, *tilamīśraḥ* ‘mixed with sesame’, *ācāraślavṣṇaḥ* ‘gentle in behaving’ (*2.1.31*), *aihahataḥ* ‘killed by a snake(bite)’ and *parasuśucchinnah* ‘cut by an axe’ (*2.1.32*).

A *pada* ending in *caturtī* (*2.1.36 caturtī ṭadartha-artha-bali-hitā-sukha-rāṣṭitāḥ*) can be combined with a *pada* either signifying a thing for it, or containing *artha* ‘purpose’, *bali* ‘ritual offering’, *hitā* ‘good’, *sukha* ‘pleasant’ or *rāṣṭita* ‘reserved’ as its nominal stem. Thus we get examples: *yūpadāruḥ* ‘wood for the ritual post’, *kundalāhiranyam* ‘gold for the ear-rings’, *indrālīḥ* ‘ritual offering for Indra’, *gohitam* ‘good for cows’, *gosukham* ‘pleasant for cows’ and *putrarāṣṭitāḥ* ‘reserved for the son’.
Instances of a *tatpurusa* compound with a constituent in *pañcamī* (ablative) are limited. Pāṇini identifies entities serving as the source of fear as *apādāna* ‘ablative’ (1.4.25 bhī-trārthānām...) and rules *pañcamī* after them. Such words can be combined with those words which may contain the nominal stem *bhaya* ‘fear’ (2.1.37 *pañcamī bhayena*). This can give the example *vyrabhayam* ‘fear of a wolf or wolves’. A few *padas*-ending in *pañcamī* may be combined with other *pada* provided these latter contained items such as *apeta* ‘away’, *apodha* ‘separated’, *mukta* ‘released’, *patita* ‘fallen’ and *apatrasta* ‘frightened’ (2.1.38 *apetāpoda*...). Examples for these are *sukhāpetaḥ* ‘away from comfort’, *kalpanāpodaḥ* ‘separated from or lacking imagination’, *cakramuktāḥ* ‘released from the wheel’, *svargapatitāḥ* ‘fallen from heaven’ and *taraṅgāpatrastāḥ* ‘frightened of waves’. Finally, *padas* which end in *pañcamī* and either contain *kṛcchra* ‘difficult’ or items which have the signification of *stoka* ‘little’, *dūrā* ‘distant’ or *antika* ‘proximate’ may be combined with *padas* containing a *Kta*. Thus, we get examples such as *stokānmuktāḥ* ‘saved by a little effort’, *kṛcchṛālabdāḥ* ‘obtained with difficulty’, *antikādāgataḥ* ‘arrived from a nearby place’ and *dūrādāgataḥ* ‘arrived from a distant place’ (2.1.39 *stoka-antika-dūra-artha-kṛcchrāṇi ktaṇa*).

A detailed enumeration of *tatpurusa* compounds having a constituent in *saptamī* (locative) is available in 2.1.40 and 2.1.40-48. This time Pāṇini does not identify specific constituents ending in the locative. Instead he cites the nominal stems of constituents which combine with a constituent in the locative. Consider 2.1.42 *siddha-śuṣka-pakva-bandhaś ca* which states that a *pada* ending in locative may be combined with another *pada* which contains nominal stems such as *siddha* ‘made’, *śuṣka* ‘dried up’, *pakva* ‘cooked, ripe’ and *bandha* ‘tied’. Thus we derive *grāmasiddha* ‘made in the village’, *atapāśuṣka* ‘sun-dried’, *sthālipakva* ‘cooked in a sthāli (a vessel)’ and *yuṣpabandha* ‘tied to a ritual post’ from *grāma + ṇi + siddha + sU, atapa + ṇi + śuṣka + sU, sthāli + ṇi + pakva + sU and yuṣpa + ṇi + bandha + sU* respectively. A few other rules also provide for a *pada* in the locative to be combined with another *pada* with specific stems and semantic conditions.

Pāṇini waits almost till the end of the section to describe *tatpurusa* compounds one constituent of which ends in *ṣaṣṭhi* ‘the sixth *sU* triad’. This is only logical since relations expressed by *ṣaṣṭhi* are considered a residue (*śeṣa*) of relations expressed by other endings. Pāṇini presents 2.2.8 *ṣaṣṭhi* whereby a nominal ending in *ṣaṣṭhi* is combined with a logically connected nominal. We have already discussed *rājapurusa* which is derived from *rājan + ṇas purusa + sU*. This rule is a general rule to which Pāṇini notes certain exceptions. For example, a word ending in *ṣaṣṭhi* cannot be combined with a logically connected word if the *ṣaṣṭhi* expresses *nirdhāraṇa* ‘singling out an individual or a thing on the basis of class, quality and action’ (2.2.10 *na nirdhāraṇe*). A string such as *ksatriyo manusyanām śūratamah* ‘a Kṣatriya is the bravest among all men’, derives from *ksatriya + sU*
manusya + ām śūratama +sU. Although ksatriya + sU and manusya + ām are logically connected, 2.2.10 will block their combination since the saṣṭhi (ām) has been added after manusya to express nirdhāraṇa. Similarly, a nominal ending in saṣṭhi cannot be combined with any one of the following: an ordinal (ending in a suffix pūraṇa cf. 5.2.48 tasya pūraṇe..., etc.), a word expressing quality (gūna), a word expressing satisfaction (suhiṣṭha), a word ending in affixes Saṭṛ and Saṇac (3.2.127 taur sat), an indeclinable, a word ending in tavyaT (3.1.96 tavyat...) and a word co-referential with the nominal in saṣṭhi (2.2.11 pūraṇaguna...). Consequently, compounds are not permissible for strings such as chāṭrāṇām pāṇcamah, 'fifth among the students', kākasya kārṣṇyam 'blackness of the crow', phalānām suhiṣṭha 'satisfaction of fruits', brahmanasya kurvā 'doing the work of a brahmaṇa', brahmanasya krtvā 'having finished the work of a brahmaṇa', brahmanasya kartavyam 'fit to be done by a brahmaṇa' and rājñāḥ pāṭiliputraṅkasya 'of the king of Pāṭaliputra'. Additionally, nominals ending in saṣṭhi cannot be combined with a logically connected nominal if this nominal contains Kta and Kta is ruled to express pūjā 'respect' (2.2.12 ktna ca pūjāyām) or adhikaraṇa 'locus' (2.2.13 adhikaraṇavācina ca).

Rule 2.3.65 kṛtyakarmanoḥ states that when nominals ending in a kṛt are to be used in a sentence, the agents or objects of the actions denoted by the roots underlying those nominals must be expressed by genitive. This presents no problem when only the agent or the object is to be expressed. But what if both are to be expressed in the same sentence? The genitive ruled by 2.3.65 can only be introduced to express the object (2.3.66 ubhayaprāpta karmani). Coming closer to the context of a tattpurasa formation, we find that 2.2.14 karmani ca will block the formation of a tattpurasa with a constituent in saṣṭhi if the saṣṭhi was ruled by rules 2.3.65-66 to denote the object. Combining a saṣṭhi which has been ruled by 2.3.65 to express agency similarly will be blocked by 2.2.16 kartari ca. Furthermore, a nominal which ends in a saṣṭhi ruled by 2.3.65 cannot be combined with a nominal ending in tṛC or aκ (2.2.15 trjakāhyāṃ kartari). Thus compounds parallel to gavām dohaḥ 'milking of a cow', kūpasya khanakah 'digger of a water-well' and tava śāyikā 'your turn to sleep' are not available in the usage.

Note here, however, that 2.2.17 nityaṁ kriḍājīvikayoh allows a pada in saṣṭhi to combine with another pada ending in aκ provided the compound denotes kriḍā 'sport' or jivikā 'livelihood'. Thus compounds such as uddālakaptupabhāṣikā 'a sport where uddālaka flowers are broken or crushed' and dantalekhakah 'he who earns his living by painting teeth' obligatorily are ordered despite the stipulation of 2.2.15. See pages 28-29 for differing interpretations of this rule.

Panini also discusses a special type of upapada 'conjoined' tattpurasa wherein a co-occurring nominal obligatorily is combined with a logically
connected nominal (2.2.19 upapadam atīṁ). The derivation of such compounds is relatively complex. Consider kumbhakāra ‘pot-maker’ which, at least theoretically, is derived from kumbha + ĕnas + ḍukṛṇ + aN. The affix (3.1.1 pratyasya) aN (3.2.1 ...aN) is added after (3.1.2 paraś ca) the verbal root (3.1.91 dhātoḥ) to express kārya ‘agent’ (3.4.67 kartari kṛt) under the condition that a co-occurring nominal also expresses karman ‘object’ (3.2.1 karmanī...). In the above string, the co-occurring nominal is kumbha + ĕnas. It is termed an upapada by 3.1.92 tatropapadām saptamistiham since it expresses the object and is referenced by saptamī in 3.2.1 karmanya an. It is interesting to note that kumbha does not take dvitiyā to express the object it specifies. Instead, it takes saśṭhi which, in turn, is conditioned by the use of the kṛt affix aN after ḍukṛṇ. The interdependency of the placement of saśṭhi and aN contributes to the complexity of such derivations. This need not trouble us, however, since for purposes of compound derivations, we will have the already derived string kumbha + ĕnas and kṛ + aN. This will yield an upapada-tatpurusa: kumbha + ĕnas + ḍukṛṇ + aN → kār + a = kumbha + as + kāra → kumbha + kāra = kumbhakāra.

Rules 2.2.20 amaivāvyayena, 2.2.1 tritiyā-prabhṛty anyatarasyām and 2.2.22 ktvā ca also provide upapada-tatpurusa formations. These rules deal specifically with combinations of indeclinables and co-occurring padas. Two interesting facts may be noted about such compounds.

(a) Compounds allowed by 2.2.20 are obligatory while those allowed by 2.2.1 and 2.2.22 are optional.

(b) Whereas 2.2.20 specifies the indeclinables which must be combined with co-occurring padas in general, 2.2.1 and 2.2.22 specify both the co-occurring pada and the indeclinable with which it may combine.

Examples of type (a) are: svādumkąram and lavaṇamkuṟram as in svādumkąram bhunkte ‘he eats the food after sweetening it’ and lavaṇamkuṟram bhunkte ‘he eats the food after salting it’. Note here that kāram of both these examples is termed indeclinable by 1.1.39 kṛṇ mejantah. Rule 2.2.20 specifically requires that indeclinables combining under this rule must end in am. Examples of type (b), under 2.2.21, also require the indeclinable to end in am but additionally require that the co-occurring padas must be those allowed by rules 3.4.47 upadamanšas... through 3.4.64 anvacyā.... Thus we get optional compounds such as mūlakoḍamśa in mūlakoḍamśaṁ bhunkte ‘eats with a bite of a radish’ and ucchaiḥkāram in ucchaiḥkāram ācaśte ‘...talks about a sad thing by raising the voice’. Rule 2.2.22 allows one non-am indeclinable, Ktvā, which is used in deriving such examples as ucchaiḥkṛtya which has the same meaning as ucchaiḥkāram.

Mention must also be made of a few other types of tatpurusa compounds. A most frequent type is the negative tatpurusa where the negative particle naN, an indeclinable, is combined with a logically connected word (2.2.6 naṁ). Thus, na brāhmaṇaṁ can have a parallel compound form abrāhmaṇaṁ
'a non-brāhmaṇa'. Another indeclinable, though not the constituent of a negative compound, is īṣat 'slight, little' which can be combined with a logically connected non-krī word to yield a tatpuruṣa compound as follows.

\[ \text{īṣat} + sU \text{piṅgala} + sU \rightarrow \text{īṣatpiṅgala} \ 'light yellow' \ (2.2.7 \text{īṣad akṛtā}) \]

Rule 2.1.49 pūrvakāla...kevalaḥ samānādhihikanena adds a new dimension to the description of tatpuruṣa compounds. It states that a tatpuruṣa compound optionally can be formed by combining a nominal which either signifies pūrvakāla 'preceding action' or contains bases such as eka 'single', sarva 'all', jarat 'old', purāṇa 'ancient, old', nava 'new' or kevala 'alone' with a logically connected co-referential nominal. Aside from the general requirement of logical connection, this rule imposes formal and semantic constraints and demands that the second constituent be co-referential with the first. Now, since samānādhihikarana 'co-referential' is a technical term, its referential index must be reconstructed. This in turn will involve 1.2.42 tatpuruṣaḥ samānādhihikarana karmadāraya which states that a tatpuruṣa compound with co-referential constituents is termed karmadāraya. Hence, 2.1.49 will allow a compound formation snātabhuktah 'a person who first bathed then ate' from snāta + sU and (anu) bhukta+sU where snāta+sU, a nominal signifying period of action, is combined with (anu) bhukta + sU which signifies following action and is co-referential with snāta + sU. Similarly one can derive ekavaiḍhyah 'there is just one person and he is the doctor', sarvamanusyaḥ 'all men', jaradaśvah 'old horse', purāṇa\-

asatham 'old dwelling', navāvasatham 'new dwelling' and kevalānnaḥ 'just the rice (grain).

The anuvṛtti of samānādhihikarana continues through 2.1.72 mayūra... which, incidentally, is also the last rule of the 2.1 quarter. This means that compounds allowed by rules subsequent to, and including, 2.1.72 will be termed karmadāraya. However, Panini introduces 2.1.52 saṁkhyāpūrvo dviguḥ to assign the term dvigu rather than karmadāraya to those tatpuruṣa compounds formed by 2.1.51 which have a nominal denoting number as their first constituent. Rule 2.1.51 allows a nominal optionally to combine with a logically connected co-referential nominal provided that the first nominal contains bases signifying dīś 'direction' or saṁkhyā 'number', or the resultant compound is to express the meaning of a taddhita 'secondary' affix or the compound is to be followed by a (third) constituent or is to express the meaning of samāhāra 'collection'.

Let us consider paurvāsālāḥ 'existing in the eastern hall' which is derived by combining two logically connected co-referential words: pūrva + Ṇi and śāla + Ṇi. The first word contains a base which signifies dīś; the second word is co-referential with it. This yields pūrvaśālā to which the taddhita affix Ņa (4.3.57 tatra bhavah) is introduced. After a few familiar operations, this will yield paurvaśālāḥ. Similarly, pūrvaśālā can be formed if a third
constituent, such as priya + sU follows, such a combination would yield pūrvasālāpriyah 'he to whom the eastern hall is dear', a bahuvrihi compound with an internal tatpuruṣa named karmadhāraya. In order to generate such compounds, one has to exhaust all the possibilities of rule application on the internal tatpuruṣa. For example, if the three constituents of pūrvasālāpriyah were allowed to form a bahuvrihi without first forming an internal tatpuruṣa, 6.1.223 would allow high pitch on the last syllable of pūrvasālāpriyah, which would be wrong. The high pitch is intended on the last syllable of pūrvasālā. This can be accomplished only if we first form the tatpuruṣa. That this preference is well motivated can be most effectively shown by taking an example such as pañcagavādhanaḥ 'he who possesses five cows as his property'. It derives from: pañcana + Jas and go + Jas which are in syntactic coordination. After the deletion of the endings and the n of pañcana, we will derive the dvigu-tatpuruṣa pañcago. Since dvigu is considered singular, the ending which can be introduced after pañcago should also be singular. However, before we add the ending sU by 4.1.2, we must exhaust the operation of placing TaC after pañcago. This will yield: pañcago + TaC → pañcago + a = pañcagava. It is only after this that pañcagava can take sU and the resulting pañcagava + sU be compounded with dhana + sU to yield pañcagavādhanaḥ. Note here that Jas after both tatpuruṣa constituents is plural nominative. The sU after dhana is singular. An attempt to form a bahuvrihi irrespective of prior tatpuruṣa formation would have created difficulties. The endings of the constituents would have been dissimilar. However, by forming the tatpuruṣa first, the resultant form pañcagava, can only take sU and pañcagava + sU and dhana + sU would have similar endings.

Besides yielding internal dvigu or karmadhāraya, constituents in syntactic coordination can also yield independent dvigu or karmadhāraya compounds. Consider the following three examples: aśṭādhyāyī 'collection of eight chapters', pañcappūlī 'collection of five bunches' and pañcakumāri 'collection of five virgins'. They are derived from aśtan + ām + adhyāya + ām, pañcan + ām + pūla + ām and pañcan + ām + kumārī + ām respectively. After the LUK deletion of ām, the first compound is realized as aśṭa(n → 0) + adhyāya = aśṭādhyāya. The other two are similarly realized as: pañcappūla and pañcakumāri. Rule 2.4.17 sa napumsakam requires such compounds to be treated as neuter. However, it is argued (Mbh. and Pradīpa, II:863-64) that if the following constituent of such a compound ends in a, the compound should be treated as feminine. In view of this, aśṭādhyāya and pañcappūlā will have to take NiP so that one can derive aśṭādhyāyī and pañcappūli. Since the final member of pañcakumārī does not end in a, it cannot be treated as masculine. Consequently, its final vowel will be shortened by 1.2.47 gostriyor upasarjanasya, yielding pañcakumāri.

The following are important rules in yielding independent karmadhāraya.
2.1.55 upamānāṁ sāmānyavacanaṁ

'Padas signifying upamāna (x to which y is compared can be combined with padas signifying sāmānya (common property of x and y) if they are in syntactic coordination.'

2.1.56 upamitam vyāghrādibhiḥ

'Padas containing nominal stems which denote a thing compared (upamita) can be combined with a pada containing vyāghra 'tiger', etc., provided common property is not being denoted'.

2.1.57 viśeṣanam viśeṣyena bahulam

'A qualifier pada can be diversely combined with another pada which contains the qualified'.

Rule 2.1.56 is an exception to 2.1.55 since it allows combining padas which do not express common property. For example, consider the compound ghanasyāmaḥ 'Lord Kṛṣṇa'. Here ghanā means cloud and syāma 'blackness' is the common property of both ghanā and syāma. This compound will be allowed by 2.1.55. However, examples like narasyāghra will be allowed only by 2.1.56. Here nara 'man' and vyāgraḥ 'tiger' possess mutually exclusive properties. Derivationally, 2.1.55 requires ghanā, the upamāna 'standard of comparison', to be placed first. Rule 2.1.56 would not allow such ordering of constituents. Rule 2.1.57 generalizes the combination of qualifiers and qualifieds in, for example, nilotpalam 'blue lotus'. However, the use of the term bahulam 'diversely' implies that such compounds may be obligatory or may not be allowed at all. Compounds such as kṛṣṇa-sarpah 'black snake' are obligatory while expressions such as rāmo jāmādagnyaḥ 'Rāma, the son of Jamadagni' are not permitted to yield a compound.

(38) Bahuvrihi compounds

As has been pointed out in our discussion of citragu and pūrvasālāpriyāḥ, a bahuvrihi is a compound where more than one syntactically related words combine to yield a nominal which serves as a qualifier (viśeṣaṇa) to something other than that which is denoted by its own constituents (2.2.24 anekam anvapadarthe). The bahuvrihis technically are treated as the remainders of the other compounds. That is, the formation of a bahuvrihi is possible only when no other compound formation is provided for (2.2.23 śeṣo bahuvrihiḥ). Together with dvandva, bahuvrihi also forms an exception to the notion of two-word compound formation.

I have already explained that a constituent which is referred to by the nominative in a rule governing compound formation is termed secondary (upasārjana; 1.2.43 prathamā nirdhiṣṭam samāsa upasārjanam). Furthermore, items identified as upasārjana are placed first in a compound (2.2.30 upasārjanam pūrvaṁ). Since anekam 'more than one' of 2.2.24 anekam anvapadarthe refers to the constituents of a bahuvrihi compound, they will be termed upasārjana. It is obvious that 2.2.30 upasārjana pūrvaṁ cannot regulate the order of constituents in a bahuvrihi compound. Pāṇini
offers the following rules to account for what should be placed first in a bahuvrihi.

2.2.35 *saptami-visesa nasahuvrthau*

“A constituent which is either a qualifier (*visesa*) or which ends in the locative (*saptami*) is placed first in a bahuvrhi compound.”

2.2.36 *nistiha*

“A constituent which ends in suffixes termed *nistiha* (*Kta* and *Klavatu*; 1.1.26 *ktaktavatasi nistiha*) is placed first in a bahuvrhi compound.”

2.2.37 *vahityagnyadisu*

“A constituent which ends in suffixes termed *nistiha* optionally is placed first when it is a constituent of compounds such as *ahitagni* ‘he who has set the sacrificial fire’, etc.”

The above may very well explain why *bahu, citra, vira, prapta, upahra* and *uddhrta* are placed first in compounds such as *bahuvrhihi* ‘he who possesses abundant rice’, *citragu* ‘he who owns brindled cows’, *vitrupuruksako (grama)* ‘(a village) where heroic people live’, *prapto (grama)* ‘(a village) to which water has reached’, *upahrapasa (rudra)* ‘(Rudra) to whom the sacrifice of an animal has been offered’ and *uddhrtaudana (stali)* ‘(a cooking pot) from which rice has been taken out’. The above compounds are all formed under the provision of 2.2.24 *anekam anyapadarthe*. Four additional rules also deal with the formation of bahuvrhi compounds.

2.2.25 *sankhyayaya vyayasaannaduradhikasankhyayah sankhyeyeye*

‘A pada which underlies an indeclinable (*aryaya*), or underlies *asaana* ‘proximate’, *adhika* ‘more’ or *adura* ‘near’ is combined with another pada denoting a thing countable (*sankhyaya*) to yield a bahuvrhi.

2.2.26 *dinnamanyantarala*

‘A pada which underlies a stem denoting directional name (*dinna*) is combined with another pada containing a similar stem provided the resultant bahuvrhi denotes an intermediate direction (*antarala*).’

2.2.27 *tatra tenedam iti sarupe*

‘A pada which ends either in the locative (*saptami*) or instrumental (*ttriya*) is combined with another pada identical to it to form a bahuvrhi.

2.2.28 *tena saheti tulyayoge*

‘Saha ‘with’ is combined with a pada in the instrument to yield a bahuvrhi, provided both constituents are equally conjoined with the action.’

The above rules account for the formation of compounds such as *dvitrh* ‘two or three’, *asaanadasaah* ‘nearly ten’, *upadosaah* ‘about ten’ (2.2.25); *daksinaapurva* ‘the direction intermediate between south and east’, *pavruttara* ‘the direction between east and north’ (2.2.26); and *keakti* ‘a fight where fighters seize each other’s hair’ and *danadanadi* ‘a fight where fighters strike with stick’, (2.2.27).
I have stated earlier that some sections of book five and six also play a major role in the derivation of compounds. The placement of the samāsānta affixes has been discussed in connection with tatpuruṣa compounds. Some of these affixes also apply to bahuvrīhis. Since the scanning process relative to this has been explained, I shall not discuss it further. However, I must discuss a few rules concerning the replacement of a feminine constituent by its corresponding masculine form.

The following is the crucial rule in this connection.

6.3.34 striyāḥ puṇavad bhaṣītuṇḍaḥ-aniūn ...  
'A form denoting feminine is treated as masculine provided (i) it has a corresponding masculine, (ii) it does not end in uN, (iii) it is followed by a feminine form having the same reference (samāṇaḥākarana) and (iv) the subsequent item is not priyā, etc., or does not contain an ordinal affix.'

This rule will operate on examples such as citragu and rūpavadbhārayāḥ ‘he whose wife is beautiful’ where citrā and rūpavali are replaced by citra and rūpavat. The shortening of o (in citrāgo) and the final ā (in bhārayā) is due to the items being upasārjana (1.2.48 gostriyar upasārjana). However, this rule will not apply to examples such as vāmorūbhārayāḥ ‘he whose wife has beautiful thighs’ gaṅgābhārayāḥ ‘he whose wife is Gaṅgā’ and kalyāṇi-pradhānāḥ ‘he among whose wives the beautiful one is chief’ where vāmorū ends in uN, gaṅgā does not have a corresponding masculine and kalyāṇi is followed by a masculine form.

Replacement by a masculine is also blocked for constituents which denote a name and end in a taddhita affix that conditions vṛddhi but does not denote rakta ‘coloured by’ or vikāra ‘modification’ (6.3.38 samjñā-puṇaraṇas ca; 6.3.39 vṛddhi-nimittasya...). This will block the derivation of *dattabhārayāḥ and *māthurabhārayāḥ in favour of dattabhārayāḥ ‘he whose wife’s name is Datta’ and māthurabhārayāḥ ‘he whose wife was born in Mathurā’. Replacement by a masculine is also prevented in examples such as sukeśībhārayāḥ ‘he whose wife has beautiful hair’ and rākṣasiṣībhārayāḥ ‘he whose wife is a demon’ (6.3.40 svāṅgācceto mānini; 6.3.41 jāteś ca) where sukeśī ends in feminine suffix i introduced after an item denoting part of a body (aṅga) and rākṣasi denotes class (jāti).

With reference to multiple word compound formation, I suggested five combinatory modes (items 8-12) and posed problems concerning them. Let us consider the following compound:

(39) rājagavikṣīram ‘king’s cow’s milk’.

By 2.1.4 saha supā, only two syntactically related words may be combined to yield a compound. Furthermore, the first two constituents, rājan + ṇas go + ṇas, cannot be combined since they both end in genitive. Instead, a combination of go + ṇas + kṣīra + sU is permissible. However, 2.1.4 also
suggests that if we treat $go + \bar{N}as$ as $go + sU$ it can then be permitted to combine with rājan + Šas. The result will be: rāja(n → 0)go = rājago. After the placement of TaC, we can derive rājago + TaC = rājago + a = rājagava. This can then take feminine affix NiP to yield rājagavi 'king's cow'. The preceding shows how we get two compounds rājagavi and gokṣira. A third compound can also result if we first combine go + Šas + kṣira + sU and then combine that result with rājan + Šas. The result will be: rājan + Šas (go + Šas + kṣira + sU) = rājan + Šas + gokṣira + sU = rājagokṣirām 'king's (cow's milk)'. This is possible because in all three derivations the samartha relationship is not impaired and only two padas are allowed to combine at any one time.

In the derivation of pūrvasālāpriyāḥ, I observed that a bahuvrihi with an internal tatpuruṣa will bring an undesired result. I also showed that paṇcagavādhanaḥ will be blocked if a three-word bahuvrihi was formed simultaneously. Commentators agree that any mode of combination is acceptable as long as the desired forms result and the samartha condition is not impaired. However, usages generally favour combining lower level formatives first, then gradually moving towards the higher level constructions. The guiding force is sāmarthya; the direction usually is from left to right. Since 2.1.4 accounts for the largest number of compounds, we may favour a combinatory mode of two padas at a time. It is probably most revealing, too, since 2.2.24 does not offer any conclusive evidence for simultaneous multiple word compound formation.

It is a general practice in deriving compounds that nominal endings of the constituents is deleted by LUK (1.1.61 pratyayasya lukṣlulupah; 2.4.71 supo dhātupratītipadikayoh). However, since a general deletion rule cannot apply unless its exceptions are fully accounted for, exceptions of LUK contained in the set headed by 6.1.3 alug uttarapade must be considered. For example, bahuvrihi compounds such as kāṇṭhekālāḥ 'he on whose throat there is black' and urasilomā 'having hair on the chest' would not lose their locative ending in view of 6.3.12 amūrdhamastakāt.... Similar non-deletion is provided for some other compounds which I shall not discuss here for lack of space. Mention must be made, however, of those rules which deal with the assignment of number and gender of compounds.

It is interesting to note that Pāṇini treated the specification of gender as falling outside of the scope of his grammar (1.2.53 tad aśisyam saṃjñā-pramānātavit; also see Mahābhāṣya on 4.1.3: liṅgam aśisyam lokāśrayatvāl liṅgasya). However, since the constituents of a compound characteristically can be of varying genders, the question of assigning gender to a compound is indeed relevant. Thus, an avyayībhāva compound is treated as neuter (napumsaka; 2.4.1 avyayībhāvas ca). A tatpuruṣa or a dvandva compound is assigned the gender similar to its following constituent (2.4.26 paravāliṅgam dvandva-tatpuruṣayoh). This, however, covers only a limited
number of compounds. For a more comprehensive treatment of gender of various compounds, one should refer to rules such as 2.4.19 tālpuṣo' naṁkarmadharayāḥ, etc. Because there obtains a qualifier-qualified relationship between a bahuvrihi compound and that which it denotes, the gender of a bahuvrihi is not difficult to ascertain. The assignment of number also is fairly straightforward. Most compounds can be handled easily. Pāṇini, however, presents some rules to account for the non-obvious. For example, 2.4.1 dvīgur ekavacanam states that a dvīgu compound is singular in number. There are also rules about dvandva compounds in singular. Most of the rules relevant to the assignment of number and gender are given in the 2.4 section of the grammar.
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asaṃprati 'inappropriate for an occasion,' sādampūṃśībhāva 'initiation of a discourse,'
paścāt 'after,' yāti 'sense of yāti, āṃśūrya 'one after the other, sequencing,' yauṣṭapāda
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arvayābhāvaḥ (1.1.41; 2.4.18) 71 'a compound termed arvayābhāva is, additionally, termed an
arṇya (indeclinable)
arvayābhāve sarvatprabhīṣṭihēyā (5.4.107) 198 'the taddhiśta affix ṭaCoccurs after nominal stems
listed in the group headed by śrādha 'autumn' when they combine in a avayābhāva compound as its final constituent'
asamyogetī līt kīt (1.2.5) 112 'a LIT affix, not originally marked with P as an it is treated as marked with K as an i, when it occurs after roots not ending in a conjunct (samyoget)'
asidhhdhavat atrībhāti (6.4.22) 79 'here onwards up to the domain of bha (of 6.4.129 bhasya), operations which share identical conditions are treated as if suspended (asidiha)'
asthiuddhahiscothiaśakhyasātānam anān uuddītaḥ (7.1.75) 86 'the final sound segment of an anāna with the signification of neuter, namely, asthi 'bone,' dādhi 'yoghurt,' sakhi 'thigh' and aksi 'eye,' is replaced with anAN, concurrently marked with uuddīta, when a vowel-initial nominal ending beginning with the instrumental follows'
ā kadārah ekā samjñā (1.4.1) 52 'only one term is to be assigned from here on prior to kadārah (2.2.38 kadārah ...')
ākrōṣa naṇi aniḥ (3.3.112) 61 'affix ani occurs after a verbal root used in construction with naṇ to denote an action in the feminine when anger (ākrōṣa) is denoted'
a kevaśatacaśāhataatāt (3.3.134) 64 'affixes introduced hereafter prior to kevaśa (3.2.77 bhṛṣṭābhāsa ...) occur after a verbal root to denote kārti who performs an action because of his nature (tāṣcīhā, sense of duty (taddhāmra), or skill (tācītābhāhāri)'
ākhyātāpayaoga ca (1.4.29) 148 'a kāraka which serves as 'one who relates' is termed apōdāna 'ablative' when the action entails regular instruction'
ār mārīddhahāvāvīyoh (2.1.13) 199 'anāna combines in an avayābhāva compound, optionally, with a syntactically related nominal stem ending in paṇcmi when mārīddha 'exclusive limit, up to, though not including' and abhīsvādhi 'inclusive limit, up to, though including' are denoted'
āj jasan asuk (7.1.50) 138 'augment asUK is introduced, in the Vedic, to Jās 'nominative plural' when this same occurs after an anāna ending in a'
āto nuṇaśarār kah (3.2.3) 81 'affix ka occurs after a verbal root which ends in a and is not used with a preverb, provided a pada occurs in construction with the signification of karnan'
āto yuṅ tinārā (7.3.32) 119 'augment yUK is introduced to an anāna ending in a when GiN, or a kyt affix marked with śann and N as an it, follows'
āto lopa iti ca (6.4.64) 'the final vowel of an anāna ending in a is deleted via LOPA when an ārdhahātukā affix which begins with augment i, or is marked with Kand N as an it, and begins with a vowel, follows'
ātmanepadeśo anayataraśayām (2.4.44) 8 'han is, optionally, replaced with uadha when an ārdhahātukā-replacement of LUN termed ātmanepadā follows'
ādīr antyena saheTa (1.1.71) 32 'an initial sound segment, when joined together with a final it, forms an abbreviatory symbol denoting itself and all intervening (non-it) sound segments'
ādīr niṣṭutavāh (1.3.5) 179 'the initial Ni, Ti and DU of an item, in upadeśa, is termed it'
ādeh parasya (1.1.54) 108 'a substitute specified for that which follows replaces its initial sound segment'
ādeca upadeśe (6.1.45) 79 'a verbal root which, in upadeśa, ends in sounds denoted by the abbreviatory term ec, is replaced with ā, but not when an affix marked with Ś as an it follows'
ādeśapratyasyayoh (8.3.59) 84 'a s which occurs at the end of a pada after inN and ku and is either a substitute, or part of an affix, is replaced with s, irrespective of whether intervenent nUM, visarjanya and a sound denoted by the abbreviatory term śAK'
ād guṇā (6.1.87) 'LOPA comes in place of a vi termed apkha'
ādyanvauad ekasmin (1.1.21) 113 'an operation applies to a single item similar to one that applies to an initial and final'
ādyantarau tākṣau (1.1.71) 96 'that which is marked with T and K as an it is attached to the beginning and end, respectively'
ādyantarau uuddīta ca (3.1.3) 40 'an affix which occurs after a verbal root is marked with uuddīta at the beginning'
ādhāro 'dhikaraṇa (1.4.45) 104 'a kāraka which serves as locus (ādhāra) of an action is termed adhikaraṇa'
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ānañ ā prdvandv (6.3.25) 79 'augment āāNis introduced to the initial constituent of ā dvandv compound which is formed with constituents ending in ā, and is used with the signification of a relationship by way of vidyā 'study, knowledge' and yoni 'birth'.

āne muk (7.2.82) 109 'affix mUK is introduced to the a of an āṅga when āṅa follows'.

āmanitrāsa ca (6.1.198) 114 'the initial vowel of that which is termed an āmanitrīta is also marked with udātta'.

āmi sarvanāmīnaḥ suī (7.1.52) 138 'augment sUT is introduced to the initial of a nominal ending, namely, ām, when the same occurs after a pronominal (sarvanāma).'

āyanejīnīyaḥ phadhaṅkaḥ ... (7.1.2) 176 'the initial ph, gh, kh, ch and gh of an affix is replaced with āyān, ey, in, īy, and īy, respectively'.

ārdhādhatuṣaḥ āca (3.4.114) 24 'the remaining affixes are termed ārdhādhatuśa'.

ārdhādhatuṣaṁ ca (6.3.5) 97 'augment iT is introduced to an affix which is termed ārdhādhatuśa and begins with a sound denoted by the abbreviation term vāt'.

ārdhādhatuk (6.4.46) 62 'when that which is termed an ārdhādhatuḥ follows an āṅga'.

ārāhāg agopuccasamkhyaḥ ... (5.1.19) 19 'a taddhita affix, namely, thak, occurs after a nominal stem to denote the sense of affixes introduced by rules prior to, and including, 5.1.63 tad arhāi, provided the stem signifies something other than agopucca 'cow's tail', samkhya 'number' and puriniṇa 'measure of weight'.

āvatāya ca (4.1.75) 92 'affix CiP occurs to denote feminine also after the non-upasraya nominal stem āvatāyā 'grandson of āvatiya'.

āvayavyaṇaparapalapī ... (3.1.126) 19 'affix NyāT also occurs after verbal roots suN 'to press out', used with the preverb aN, yū 'to mix', DuvapA 'to sow', raphA and laphA 'to speak', trapUS 'to be ashamed' and camU 'to sip'.

īkō gudantarā (1.1.3) 125 'a substitute specified with express use of the terms guna and uddhi must come in place of vowels denoted by the abbreviation term iK'.

īkō yaça aci (6.1.77) 86 'a sound denoted by the abbreviation term iK is replaced with a corresponding sound denoted by the abbreviation term yaN when a vowel follows in close proximity'.

īkō varṣo' niyā gīlavaśya (6.3.61) 118 'the final sound of a nominal which ends in a sound denoted by the abbreviation term iK with the exception of i of Ni is, in the opinion of Gālāva, replaced with its short counterpart when a constituent combines to follow'.

īg vaṇaḥ samprasāraṇa (1.1.45) 66 'a replacement vowel denoted by the abbreviation term iK is termed samprasāraṇa when it comes in place of corresponding consonants denoted by the abbreviation term yaN'.

idam is (5.3.3) 127 'iś comes in place of idam when a taddhita affix termed vibhakī follows'.

indra-varuṇa-bhava-sarva ... (4.1.94) 54 'affix Niḥ occurs to denote a female, associated with a corresponding male, after non-upasraya nominal stems indra 'Indra', varuṇa 'Varuṇa', bhava 'Śiva', rudra 'Rudra', mṛḍa 'Mṛda', hima 'ice, snow', araṇya 'forest', yava 'barley', yavana 'Ionian', mātula 'mother's brother,' and ācārya 'teacher, preceptor' where, additionally, they also receive augment aṁUK'.

ive prativrata (5.3.96) 65 'the taddhita affix KaV occurs after a nominal stem used in the sense of īva 'like' when the derivate denotes prativrtti 'image, imitation''.

i-ca gaṇaḥ (7.4.97) 79 'i comes in place of the abhyāsa (6.1.2 āviro bhyaśah) of an āṅga constituted by verbal root gaṇa when affix NiG, followed by CaN, follows'.

i āsah (7.2.83) 109 'āna when occurring after ās is replaced with ī'.

idātā ca saptaṃyārīke (1.1.19) 121 'forms which end in ī and ā, and denote the sense of locative (āṣapiṃ), are termed pragṛhyā'.

idātā deva-vajrāṇaṃ pragṛhyā (1.1.11) 121 'a form which ends in ī and ā, and denotes the sense of two, is termed pragṛhyā'.

īsāt akrītī (2.2.7) 205 'a padā which contains īsat 'a little, slight' combines, optionally, in a tātparūṣa compound with a syntactically related padā which ends in a sUT, but does not contain a stem in a kṛt'.

ugavādiśibho yat (5.1.2) 159 'the taddhita affix yaT occurs to denote the sense of affixes introduced by rules prior to that which contains kṛita, after a nominal stem which either ends
in u, or is listed in the group headed by gava' 

\textit{uccair udālāṣ} (1.2.29) 122 'that which is articulated with a higher pitch is termed udālāṣ' 
\textit{unuḍayō bahulam} (3.31) 62 'suffixes uN, and its likes, are introduced after verbal roots, variously (bahulam), when an action is denoted at the current time' 
\textit{upadāmsas triyāyam} (3.4.47) 204 'affix 
\textit{NamU}. occurs after verbal root danṣA 'to bite,' used with the preverb \textit{upa}, when it occurs in construction with a \textit{pada} ending in the instrumental (triyāy)' 
\textit{upadeśa} \textit{j anunāśika it} (1.3.2) 38 'the nasalized vowel of an item in \textit{upadeśa} is termed it' 
\textit{upapadami ati} (2.2.19) 179 'a co-occurring \textit{pada} (upapada; 3.1.92 \textit{tasta}-\textit{pada} samśaṭam) which does not end in a tin, combines, obligatorily, in a \textit{tatpurāṣa} compound with another syntactically related \textit{pada}' 
\textit{upamāṇīnī sāmānyavacanaṇaḥ} (2.1.55) 207 'a \textit{pada} which ends in a sU and denotes \textit{upamāṇī} 'standard of comparison' optionally combines in a \textit{tatpurāṣa} compound with a syntactically related co-referential \textit{pada} which ends in a sU and denotes a common quality' 
\textit{upamītaṃ tyāghrādibhiḥ sāmānyapravṛtye} (2.1.56) 207 'a \textit{pada} which ends in a sU and signifies \textit{upamī} 'object of comparison' combines, optionally, in a \textit{tatpurāṣa} compound with a syntactically related coreferential \textit{pada} which ends in a sU and contains items enumerated in the list headed by \textit{tyāghra} 'tiger,' provided a word which denotes a common quality is not used' 
\textit{upasargāḥ kriyāyoge} (1.4.59) 238 'forms enumerated in the list headed by \textit{pra} are termed \textit{upasarga} when used in construction with verbal roots' 
\textit{upasarnamāṇi pūrvam} (2.2.30) 180 'a constituent \textit{pada} which is termed upasarjana 'secondary' is placed first in a compound' 
\textit{upān mantriṣakarana} (1.3.25) 8 'a suffix termed \textit{āmane}pada occurs after \textit{sthā} to stay, stand 'when the same is used in construction with the preverb \textit{upa} denoting the action of reciting a \textit{mantra} (hymn)' 
\textit{upānītavāyāṅvavasāḥ} (1.4.48) 149 'a kārika which serves as locus is termed karman when the action is denoted by a root used with the preverbs \textit{upa}, \textit{anu}, \textit{adhi} and \textit{aN}' 
\textit{ubhaya-priṣṭapu karmani} (2.3.66) 161 'a \textit{sāṣṭhi} 'genitive' occurs to express only karman 'object' when both a kariṣ and karman, not already expressed otherwise, are to be expressed in construction with a nominal ending in a kṛt affix' 
\textit{ubhe abhayaṣtam} (6.1.5) 124 'those two, both, are termed \textit{abhyasta}' 
\textit{ur an rāparah} (1.1.51) 35 'a replacement vowel denoted by the abbreviatory term aN is automatically followed by r when the same comes in place of r' 
\textit{uḍālo} \textit{ji kramavardhāṇapatutāḥ} (1.2.27) 122 'a vowel articulated with duration of \textit{u}, \textit{i} and \textit{u3} is termed \textit{hrasva} 'short,' dirgā 'long' and \textit{pluta} 'extra-long,' respectively' 
\textit{ṛta} id dhātoḥ (7.1.100) 107 'the final r of a dhātu 'verbal root' termed \textit{anga} is replaced with i' 
\textit{ṛtō} vidyāyōnasambandaheeṣyāḥ (6.3.23) 191 'non-deletion, via LUK, applies to a genitive (sāṣṭhi) which occurs after a nominal stem ending in r and used with the signification of a relationship established by way of viyā 'knowledge' and 
\textit{yoni} 'birth' ' 
\textit{ṛtigālāḥkhiḥ} (3.2.59) 119 'affix K\textit{uN} occurs, by \textit{nīpātana}, in the derivation of \textit{ṛtōk}, \textit{daṇḍik}, \textit{svāk}, \textit{dik}, and \textit{uṣṇik}; additionally, it occurs after verbal roots \textit{āṅg}U 'to bend,' \textit{yujf} 'to join' and \textit{kṛnā} 'to be crooked' when roots are used in construction with a \textit{pada} ending in a sU' 
\textit{ṛtṛavāntvāntvamādāṅvāṅhīravyāyini chandasi} (6.4.175) 191 'the words \textit{ṛtṛa}, \textit{vāṃśya}, \textit{mūḍhvi} and \textit{hāra}ya are derived via \textit{nīpātana} in the Vedic' 
\textit{ekāḥ pūrvapraṇyaḥ} (6.1.84) 62 'one in place of both the preceding and the following' 
\textit{ekavacanam sambuddhāḥ} (2.3.49) 124 'a singular termed \textit{āmantrī} is termed sambuddhi' 
\textit{ekavibhākṣicāpīrvansti} (1.2.44) 77 'that which has a fixed nominal ending (in the paraphrase of a compound) is termed upasarjana provided preplacement is not to be performed' 
\textit{ekāco duṣṭa praṭhamasa} (6.1.1) 63 'that which is formed with the first vowel of an item is iterated to become two' 
\textit{ekāco bhaṣa bhaṣa jāpanastyā} (8.2.37) 85 'a replacement denoted by \textit{bhaṣa} comes in place of one denoted by \textit{ba} which, in turn, forms part of a monosyllabic part of a verbal root ending
in jhaS, when boS occurs either at the end of a pada, or occurs followed by s or dhva preceded by a sound denoted by jhal.

eko goire (4.1.93) 176 'only one goira affix is introduced after a syntactically related nominal stem when descendants are denoted'

eti pūrīcām déśe (1.1.75) 122 'a form whose first among vowels is denoted by the abbreviatory symbol eWis termed urdha when the denotation is a place in the east'

ec ekg bravisvāde (1.1.48) 107 'ek, alone, comes in place of a vowel denoted by the abbreviatory term eC when replacement in short is specified'

er' yuvāyāvah (6.1.78) 115 'a sound denoted by the abbreviatory term eC is replaced with ay, av, a, ā, respectively, when a sound denoted by the abbreviatory term ac follows in close proximity (sānhiācā)

enaP dhātīyā (2.3.31) 160 'the second triplet of sUP is introduced after a nominal stem which occurs in construction with another ending in affix enaP'

enab ānyatastāryaṁ aditre (5.3.35) 160 'the taddhita affix enaP occurs with the signification of diś 'direction,' optionally, after nominal stems uttara, adhara and daksīṇa when they end in the locative (saptāmi) and nominative (prathamā), though not in the ablative (pancāmi), provided derivates denote diś 'direction,' desa 'place' and kāla 'time' as non-distant (adīrā)

er anekācā samyogapūrṇavya (6.4.82) 134 'an aniga which consists of more than one vowel and ends in i, where i is not preceded by a conjunct (samyogī) contained within a verbal root, is replaced with yaN when an affix beginning with a vowel follows'

kaďārīṁ karmadhārāye (2.2.38) 64 'a pada which contains kaďārī, et cetera, is, only optionally, placed first in a karmadhārāya compound'

kanyāvidbhya yak (3.1.27) 36 'affix yak is introduced to denote bhāva 'root-sense' after verbal roots enumerated in the group headed by kanyāN 'to scratch'

kambala ca samjñāyāṁ (5.1.3) 73 'the taddhita affix yaT occurs also after the nominal stem kambala 'blanket' to denote the sense of affixes introduced by rules prior to that which contains kṛta, provided derivates denote a name (samjñā)

kartāri karmayāthāre (1.3.14) 73 'an āimanepadā suffix occurs after a verbal root when an agent with reciprocity of action is denoted'

kartāri krt (3.4.67) 131 'an affix termed krt is introduced when the signification is agent (kartīt)

karS (2.2.16) 28 'and also when the signification is agent (kartīt)

kartāri sat (3.1.68) 69 'affix Sat is introduced after a verbal root when agent (kartīt) is denoted'

kariḥ kyaN salōpai ca (3.1.11) 46 'affix KyaN occurs, optionally, to denote ácāra 'conduct' after a pada which ends in a sUP and denotes an agent serving as an upamāna 'standard of comparison; additionally, the final of the nominal stem goes through deletion via IOPA'

kartur ippalitaman petrol (1.4.49) 104 'a kāraṇa which serves as most desired by the agent is termed karmān'

kartiṣkariṣayos triṣyā (2.3.18) 55 'the third triplet of nominal endings is introduced when kārīt 'agent' and karaṇa 'instrument' are denoted'

kartiṣkariṣe kṛtā bahulam (2.1.32) 7 'a pada which ends in triṣyā and, either denotes a kṛtī or karaṇa, combines in a taippuruṣa compound, variously (bahulam), with a syntactically related nominal stem which ends in a sUP and contains a derivate in kṛt'

kartiṣkarnaman kṛtī (2.3.65) 161 'a genitive (saṣṭhī) is introduced to express kariṣk and karmān when the nominal is used in construction with an item which ends in a kṛt affix, and when kariṣk and karnān are not expressed otherwise'

karmānī yam abhitprātī sa sampradānām (1.4.31) 104 'a kāraṇa whom the agent intends as goal of the object of his action is termed sampradāna'

karmāni ca (2.2.14) 29 'a pada which ends in saṣṭhī and denotes karman also does not combine in a taippuruṣa compound with a syntactically related nominal which ends in a sUP'

karmāni dvālīyā (3.2.3) 56 'the second triplet of nominal ending is introduced when object (karman) is denoted'

karmāni hanah (3.2.86) 20 'affix NinI occurs after verbal root yajA used in conjunction with a pada which ends in a sUP and signifies karaṇa 'instrument,' provided action is denoted in the past'
karmaṇy an (3.2.1) 63 ‘affix aN is introduced after a verbal root when the same is used in construction with a pada which denotes karman’
karmaṇy adhikaraye ca (3.3.93) 154 ‘affix Kī occurs, also, after verbal roots termed ghu when roots are used in construction with a nominal denoting karman, and the derivate denotes locus (adhi karana)’
karmapravacaniyayukte dvitiyā (2.3.8) 160 ‘the second triplet of nominal endings is introduced after a nominal stem when it is used in construction with a karmapravacaniya (1.4.83 karmapravacaniyaḥ)’
karmapravacaniyaḥ (1.4.83) 62 ‘the followings are termed karmapravacaniya’
karmavat karmanā tulyakriyāḥ (3.1.87) 158 ‘when the agent (kārya) of a given action behaves in a manner similar to its object (karman), the kārya is treated as if it was karman’
karaśātavato ghaṇo’ nta udāttaḥ (6.1.159) 193 ‘an udātta is assigned to the final of verbal root kṣ to draw,’ and also to that which ends in affix GHaN and contains an a’
kāraka (1.4.23) 62 ‘when that which is doing’
kālaḥ (2.1.28) 201 ‘a pada which ends in the accusative (dvitiyā) and signifies time combines, optionally, in a taipuruṣa compound with a syntactically related pada which ends in a sUP and contains a stem in Kīa’
kālādhiyonvar aśvasaṃyogaye (2.3.5) 160 ‘a dvitiyā occurs after nominal stems denoting hīla ‘time’ and adhiyā ‘road, distance’ when aśvaśasamyoga ‘connected continuation’ is denoted’
kālebhyo bhavavat (4.2.34) 114 ‘the tadāhita affixes which occur after syntactically related nominal stems having the significance of hīla ‘time,’ & cetera, occur in a manner similar to affixes introduced for derivate with the significance of bhava ‘born, or found’ there’
kimsarvanāśabahubhyo devyāṭibhyah (5.3.2) 38 ‘the tadāhita affixes, introduced hereafter prior to diśāḥ, occur after a nominal stem which consists of kim ‘what, which’ and sarvanāma ‘pronominal,’ with the exclusion of its subgroup headed by dvi ‘two’ and bhau ‘many’’
kimāḥ samkhyaśparimāṇe datī ca (5.2.41) 125 ‘the tadāhita affixes Datī, in addition to vaipUP with concurrent replacement of its u with gh, occurs to denote the sense of genitive (saśthī) after the syntactically related nominal stem kim ‘what’ when it ends in the nominative (prathama) and distinguishes a numerical measure (saṃkhyaśparimāṇo)’
kuruṇādiṣṭhyā vyah (4.1.170) 125 ‘the tadāhita affix Ṛya occurs to denote an aprita ‘offspring’ after a syntactically related nominal stem which (i) ends in the genitive, (ii) is constituted by kun, or (iii) begins with n, provided the base names a jina pada ‘principal’ with the significance of a kṣatraṃa’
kṛttadāhitasamāśās ca (1.2.46) 52 ‘that which ends in a kṛt or tadāhita affix, or is a samāśa, is also termed a nominal stem’
kṛtāḥ (3.1.95) 27 ‘affixes enumerated hereafter are termed kṛtāḥ’
kṛtāḥ aśvasaṃyogaye (3.1.93) 24 ‘a non-tīN affix is termed kṛt’
krn mejanīthaḥ (1.1.39) 204 ‘items ending in kṛṭ-affixes which end in m, or a vowel denoted by eC, are termed avyaya ‘indeclinable’’
krītī ca (1.1.5) 86 ‘vowels termed guṣṭa and uvṛddhi do not come in place of a vowel denoted by the abbreviatory symbol i when that which is marked with K and N as an it follows’
krāktavatūti niṣṭhā (1.1.26) 74 ‘affixes Kīa and KvaṭaUP are termed niṣṭhā’
krītī ca (2.2.12) 203 ‘a pada which ends in the genitive (saśthī), also, does not combine in a taipuruṣa compound with a syntactically related pada which ends in a sUP, contains a Kīa and denotes pūjī ‘honouring’’
kūt māṃ niśyam (4.4.20) 129 ‘the tadāhita affix māṭ occurs obligatorily after a nominal stem which ends in Kīra (3.3.88 dvitiyā kīraḥ), and is used with the instrumental, provided the derivate denotes ‘...brought about by’’
kūtī ca (2.2.20) 187 ‘a pada used in construction with another (upadāda), referred to by rules 3.4.47 upadānśa...through 3.4.64 anvayā...also combines in a taipuruṣa compound with a form ending in Kīva’
kruddhavrtyasūryāṃ (1.4.37) 146 ‘a kāraṇa which serves as one towards whom auger is directed is termed sampradāna when verbal roots having the significance of kruddh ‘to be angry,’ druḥ ‘to wish harm to’ and ṣṛṣṇ ‘not to tolerate’ and asīyā ‘finding fault with
qualities' are used

krudhadrurhor upasasrayor karma (1.4.38) 146 'a kāraka which serves as one toward whom anger is directed, is termed karman when action is denoted by verbal roots krudh and druḥ, used with the preverb upa'

kṛṣīṣī kṣepa (3.2.76) 30 'affix kṣepa also occurs after a verbal root, used with or without a preverb, when the root occurs in construction with a pada ending in a sūp'

khaṭpā kṣepa (2.1.26) 201 'a pada which ends in the accusative (dūvyā) combines in a ātīpuraṇa compound with a syntactically related nominal terminating in sūp and containing a stem ending in KIA, provided kṣepa 'censure' is denoted'

kharavasānayor visarjanīyaḥ (8.3.15) 167 'a replacement in visarjanīya comes in place of the final sound segment of a pada which ends in r, provided a sound denoted by the abbreviatory term kharā, or avasāṇā 'cessation of speech, pause,' follows in close proximity'

gatibuddhirpratyavasānārthaśabakarmakarmānāṃ ani kartti sa yau (1.4.52) 149 'a kāraka which serves as the agent of a non-Nic root that either has the signification of gati 'movement,' buddhi 'perception,' pratyavasāna 'consuming,' or has śabda 'noise' as its object, or has no object at all, is termed karman when the same root is used with Nic'

gati ca (1.4.59) 123 'items enumerated in the list headed by pra are also termed gati when used in connection with a verb'

gurumadacaryamanasūkṣupasarga (3.1.100) 93 'affix yaT also occurs after verbal roots gudA 'to speak,' madA 'to rejoice, be drunk,' carA 'to move, consume,' and yena 'to sustain, hold, control' when no upasarga 'preverb' is used

gamer id parasmayadeṣu (7.2.58) 130 'augment i is introduced to an affix termed ārthadhāńuka which begins with s and occurs after an anīga, namely, verbal root gam 'to go,' provided an affix termed parasmayada follows'

gurūdibhibhyayaḥ (4.1.105) 139 'the taddhita affix yaT occurs after a syntactically related nominal stem which ends in the genitive, is listed in the group headed by guruga, provided the derivate denotes a gotra-descendant'

gīṃkūtīdibhibhyo 'ñinītī (1.2.1) 63 'an affix, not originally marked with N and Nas an it is treated as marked with N when it occurs after gaN 'to read, recite,' or after roots of the group headed by kut'

gire ca senakasya (5.4.112) 118 'the taddhita affix TaC also occurs, optionally in the opinion of Senaka, after an anayabhiśava compound ending in giri 'mountain'

gūṇa yakṣukoh (7.4.82) 65 'a gūṇa vowel comes in place of an ik-final abhyāsa of an anīga when affix yaN, and its deletion via LUK, follows'

guptākṣibhibhyah san (3.1.5) 101 'affix san occurs, optionally, to denote iṛkha 'wish' after roots which name the object of which, and share the same agent with, the action denoted by is 'to wish'

gotrād yūny astrīyām (4.1.94) 175 'a taddhita affix occurs after a syntactically related nominal stem which signifies a descendant termed gotra, provided a non-female yuvan 'young male' is to be denoted'

gostīraya upasarjanasya (1.2.48) 193 'the final vowel of a nominal stem ending in go, or ending in a feminine affix, is replaced with its short (hraswa) counterpart when termed upasarjana 'secondary'

ghaṇī ca bhāvanakarmeyeṣuḥ (6.4.27) 83 'the penultimate n of an anīga, namely, mūnj 'to color,' goes through deletion, via LOPA, when affix Śaṇa follows'

gharūpakālpucaladivasaśramakahātesuḥ ūnaśeṅkaḥ krassah ... (6.3.42) 129 'affix N, at the end of a polysyllabic (aneṅka) nominal which is used with the denotation of feminine, does not end in ṛn, and shares an identical base for usage with a corresponding masculine, is replaced with its short counterpart when ghaṇa, Ḫalpa, keśaT, brvṇa, maita and haṭa follow'

ghvасor eṣṭhitau abhyāsaśalpaḥ ca (6.4.119) 82 'the final sound segment of an anīga termed ghu, or
an anga constituted by as, is replaced with e when hi follows, with an additional provision that the abhyāsa be deleted by means of LOPA'

dah si dhuḥ (8.3.39) 138 'augment dhUṬ is, optionally, introduced to a pada which begins with s and occurs after a pada ending in d, when close proximity between sounds obtains'

nāmo hravād aci namun niṣayam (8.3.32) 138 'augments nUṬ, nUṬ and nUṬ are, obligatorily, introduced at the beginning of a pada which begins with a vowel (aC) and occurs after a pada ending in n, m, and n'

niṣ ca (1.1.53) 86 'a substitute marked with N as an it comes in place of the final sound segment of that which is specified with the genitive'

niṭti hravās ca (1.4.6) 123 'except for stī, a form which denotes feminine, ends in i/ u (short or long) and has a replacement in niYAN and uvUṭ is, optionally, termed nadi when an affix marked with N as an it follows'

niṭr ām nadyāṃniśṭhyah (7.3.116) 136 'a replacement in ām comes in place of affix Nī when the same occurs after an anga termed nadi, or an anga terminating in āP, or else, an anga constituted by Nī'

niyāp-pritipadiśā (4.1.1) 54 'an affix, through the end of adhyāya five, occurs after that which either ends in affixes marked with Nī and āP, or is termed a nominal stem'

caturthī cāsīvyoyuṣyamadrabhadrukāsalsukhāṭhastāth ... (2.3.73) 160 'a caturthī 'fourth triplet of sUP; dative' occurs, optionally, after a nominal stem when items having the significance of āyuṣya 'longevity,' madra 'joy,' bhadra 'good fortune,' kuśala 'well-being,' sukha 'comfort, happiness,' artha 'prosperity' and hiśa 'benefit' are used in conjunction, and benediction is expressed as the remainder'

caturthī tadarthaḥabhatiśā (2.1.36) 41 'a pada which ends in the dative (caturthī) combines, optionally, in a taipūrṇyas compound with a syntactically related pada which ends in a suP and denotes tadartha 'a thing intended for by the denotatum of the pada ending in the dative,' or contains artha 'purpose,' baḥ 'sacrificial oblation,' hiśa 'beneficial,' sukha 'pleasure' and raḍika 'reserved, protected'

caturthī sampradāne (2.3.13) 146 'a fourth triplet of sUP is introduced after a nominal stem when sampradāna is denoted'

cōṭhe dvandvā (2.2.19) 8 'a compound termed dvandva is formed in the sense of ca 'and' '

ciṇ te padaḥ (3.1.60) 45 'Gīḍ is introduced in place of affix CLI after verbal root pada 'to go'

when ta-replacement of LUN with the denotation of kartti follows'

ciṇ bhāvakarmanoḥ (3.1.66) 96 'affix Gīḍ occurs in place of CLI after a verbal root when a ta-replacement of LUN with the denotation of bhāva and karman follows'

ciṇāgni cīye ca (3.1.132) 61 'affixes KyāP and ya occur, via nīpāta, to also derive cīya and agnicīya, respectively, when agni is denoted'

cuṭi (1.3.7) 37 'an initial sound denoted by eUL (1.1.69 anudīt ...), or UL of an affix, is termed it' cchvoh śūd anunāśke ca (6.4.19) 134 'a e-ch and v of an anga is replaced with s and uṭH, respectively, when an affix beginning with a nasal, or one constituted by Kṣ, or one beginning with a sound denoted by the abbreviative term jhāl, and marked with K or N as an it, follows'

ciṭ lūnī (3.1.43) 45 'affix CLI occurs after a verbal root when LUN follows'

ciṭ sc (3.1.44) 45 'affix CLI is replaced with sIC when LUN follows'

chandasi niṣṭaṛkyaevah uyaṭraniyon niyocchiyamaryastaryādhvaryaḥakhanyakhaṇyadevayaj- yāśprachyopāraahamavāyabhāṣyastārayopacāyaṃprāṇi (3.1.123) 118 'forms such as niṣṭaṛkya, etcetera, are derived, via nīpāta, in the Vedic'

chandasya uḥkayathā (5.4.117) 92 'an affix, the Vedic, can be termed sūrvadhātuka and ārthadhātuka, either way'

janapadāśabādaḥ ... (4.1.166) 124 'the taddhita affix aN occurs to denote an apāya 'offspring' after a syntactically related nominal stem which ends in the genitive and names a janapada 'principality, cluster of villages' with the signification of a kṣatiṛṛī'

janapade laup (4.2.81) 101 'a taddhita affix which occurs after a syntactically related nominal stem with the signification of deśa 'place' is deleted by LUP, provided the derivative denotes a particular janapada 'principality, cluster of villages' so named'
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janikartṣṭaḥ prakṛtiḥ (1.4.30) 148 ‘a kāraka which serves as material cause from which the agent of jan ‘to be born’ arises is termed apādāna’

jaśreyā jāras anuśaśrayāya (7.2.101) 133 ‘jāras comes, optionally, in place of an aṅga, namely, jāra ‘old age,’ when a vowel-initial affix termed vihakti follows’

jaśisātoḥ sīh (7.1.20) 122 ‘Śī comes in place of the nominal endings fas and Śas when they follow an aṅga termed neuter’

jāgura ‘vīcāravyākṣa’ (7.3.85) 39 ‘a replacement in gūna comes in place of the iKvowel of an aṅga, namely, jāg, when an affix termed sāravadhātuka and ārdhadhātuka, with the exception of vi, GīN, NaL, or an affix marked with N as an it, follows’

jāti ca (6.3.41) 209 ‘a feminine form which denotes jāti ‘class’ and shares an identical base for usage in the masculine is not treated as that of its corresponding masculine when a constituent other than mānīn follows’

jivati tu vāmīya yavu (4.1.163) 104 ‘the offspring of a grandson, and any other thereafter, is instead, termed yuvan, when a vāmīya ‘father, or someone equal to him is alive’‘

juhōyādīdhīyāḥ śuḥ (2.4.75) 36 ‘affix Sar goes through deletion via Śu when it occurs after roots enumerated in the group headed by hu ‘to call, perform sacrifice’

jhayah (5.4.11) 84 ‘the taddhita affix TaC occurs, optionally, after an arojāyibhāva compound which ends in a sound denoted by the abbreviatory term jhaV’

jhayah (8.2.10) 84 ‘the m of maiUp is replaced with w when maiUP occurs after that which ends in a sound denoted by the abbreviatory term jhaV’

jhalim jasi’ nite (8.2.39) 85 ‘a sound denoted by jaS comes in place of a sound denoted by jhal, which, in turn, occurs at the end of a pada’

jhal jhal (8.2.26) 85 ‘the S which occurs after a sound denoted by jhal is deleted by LOPA when a sound denoted by jhal follows’

nīddayas tadvṛjāḥ (5.3.119) 64 ‘the taddhita affixes introduced up to here beginning with Nya (of 5.3.112 pūgīṇa) grāmanipūrṇa) are termed tadvṛjā’

teh (6.4.143) 97 ‘the IT of an aṅga termed bha is deleted by means of LOPA when an affix marked with D as an it follows’

tirmi’ thuc (3.3.89) 37 ‘affix atkuc occurs after a verbal root marked with TU as an it when bhāva, and a kāraka other than karit, is denoted’

dati ca (1.1.25) 64 ‘number words which end in affix Dati are termed sa’

dvītāh (3.3.88) 37 ‘affix Kṛ occurs to denote bhāva ‘root-sense’ after a verbal root marked with DU as an it’

nuvārana (3.1.133) 128 ‘affixes ṇnuL and tṛC occur after verbal roots’

tanāvāvī śāmanipadām (1.4.100) 27 ‘replacements of LA affixes denoted by the abbreviatory term tāN (3.4.78 tātasajī...), and also those denoted by āna (3.2.124 laṭaḥ śaṭṣinacāv...; 3.2.106 laṭaḥ...), are termed śāmanipadā’

tātpuruṣaḥ (2.1.22) 62 ‘a compound termed tātpuruṣa’

tātpuruṣaḥ samānīdhikavāyaḥ karmadāhārayāh (1.2.42) 71 ‘a tātpuruṣa compound whose constituents occur in syntactic coordination (refer to the same thing) is termed karmadāhāraya’

tātpuruṣo naṇkarmadāhārayaḥ (2.43.19) 211 ‘a tātpuruṣa compound which is not a naN, or a karmadāhāraya, is termed neuter’

tatprayojaka hetu ca (1.4.55) 104 ‘a kāraka which serves as prayojaka ‘instigator’ of the independent agent is additionally termed hetu ‘causal agent’’

tatra teneṣaṃ iṣi svavṛupe (2.2.27) 200 ‘a pada which ends in saptami, or in iṣi, combines, optionally, in a bhuvorhi compound with an identical pada provided the derivae denotes iṣi ‘thus (characterised)’

tatra bhāvaḥ (4.3.57) 95 ‘taddhita affixes, hereafter, are introduced in the sense of tatra bhāvaḥ ‘born, of found, there’

tatraśāpadaṃ saṣṭamimśham (3.1.92) 61 ‘that which is specified there (in this domain of 3.1.91 dhātubh) by means of the locative (saṣṭami seventh triplet of sU) is termed an upapada ‘conjoined word’’

tathābhūtakam cīnīpātai (1.4.50) 149 ‘a kāraka which serves as something not desired by the agent is still termed karmas if it is related with the action in a manner similar to that
which is most desired by the agent'.

tad aśisyaṁ samajñāpramāṇavāti (1.2.53) 210 'it (retention of original number and gender of a
word) ought not to be taught since it is dependent upon usage'.

tad asyāśīty asminn iit mātrup (5.2.94) 8 'a taddhita affix, namely, mātrup, occurs to denote the
sense of the genitive (śaśṭī, tasya), or of the locative (śaptam, tasmī) after a syntactically
related nominal stem which ends in the nominative (prathamā, tati), provided it is quali-
fied with the denotatum of asti 'is, exists'.'

taddhiitasya (6.1.64) 79 'of that which is termed a taddhita'

taddhitīla (4.1.76) 26 'here begins the domain of affixes termed taddhitī'

taddhitīrthottarapada... (2.1.51) 139 'a pada which ends in a sūp and contains a stem denoting
dīs 'directional,' or sāṃkhya 'number,' combines in a tatpurusa compound with a syntacti-
cally related coreferential pada which ends in a sūp, when either the meaning of a taddhīta
affix finds its scope, or a third word is to follow, or else, samāhāra 'collection, grouping' is
denoted'.

taddhitītasya acīm ādeh... (7.2.117) 174 'an ā comes in place of initial among vowels of an aṅga,
namely, deviḥā, śimśapā, dīṣyavī, dirghasattra and śreyas, when a taddhitīta affix marked with
N, N and K follows, and the context is that of a replacement in vṛddhi'

tad vahai rathyaṅgatāśānagam (4.4.76) 64 'the taddhtīta affix ya occurs after nominal stems
ratha 'chariot,' yuga 'yoke' and prāśānag 'trial yoke' when the stems are used with the
accusative and derives denote the sense of vahai '...carrying ...'

tasādkhyābhya uḥ (3.1.79) 36 'affix u occurs after verbal roots enumerated in the class headed
tanU 'to stretch, expand,' and also after verbal root krN 'to make, do.' when a
sāroddhitātuka affix with the denotation of karta follows'

taraptamatapau ghaḥ (1.1.22) 121 'affixes tarāP and tāmāP are termed gha'

tvasyatvaṁśīyarāh (3.1.96) 5 'affixes tasya, tasyaT and anīyaR are introduced after verbal roots'

tasau mātvatthe (1.4.19) 133 'a form which ends in -and -ś is termed bha when an affix denot-
ing the sense of matup follows'

tasmād ity uttarasya (1.1.67) 45 'that which is used with an ablative specifies the left context of
an operation on what follows'

tasmīn iit nirṛṣīte pūrvasya (1.1.66) 45 'that which is used with the locative specifies the right
context of an operation on what precedes'

tasmāt hi tam (5.1.5) 64 'a taddhīta affix occurs as specified to denote the sense of 'beneficial to
that' after a syntactically related nominal stem which ends in the caturthi 'fourth triplet of
sūp,' daive'

tasya paramāmpreti (8.1.2) 124 'the final of this iterated sequence is termed āmṛtiṇa'

tasya pūrṣya da (5.2.48) 8 'the taddhīta affix Da occurs to denote the sense of pūraṇa 'that by
something is brought to completion, ordinal number' after a syntactically related
nominal stem which signifies number and ends in the genitive (śaśṭī)'

tasya lopah (1.3.9) 8 'an item termed it goes through deletion via LOPA'

tasya samāha (4.2.37) 68 'a taddhīta affix, namely, aN, occurs after the first among syntactically
related nominal padas which ends in the genitive (śaśṭī), provided the derivate denotes
'a collection or group of that'

tasyājñaya (4.3.92) 72 'a taddhīta affix, namely aN, occurs as ruled to denote the sense of
apata 'offspring' after the first among syntactically related nominal stems ending in the
genitive (śaśṭī)'

īnīty evacacanaadvacacanahabvacacanaṁ evaśā (1.4.102) 69 'the individual members of each
triad of sūp are termed evacacan 'singular,' dvivacana 'dual' and bahuvacana 'plural'
respectively'

tābyāṁ anyatraṁapayā (3.4.75) 39 'affixes uN, et al., also occur with a non-dative and ablative
denotata'

īnātriṣṭiṣṭi prathamamahāyamottamaḥ (1.4.101) 69 'the three elements of each triad of iīN is
termed prathama 'first, third,' madhyama 'second' and utama 'first, best, respectively'

īnīsit sāroddhitākham (3.4.113) 24 'that which is denoted by iīN, and also that which is marked
with Šas an i, is termed sāroddhitātuka'
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tīptaśhīṣipatā... (3.4.78) 25 'tiP/ tas/ jhā; sīP/ thas/ tha; miP/ vas/ mas; ta/ āīm/ jha; thūs/ athōm/ dhōam; iṭ/ vahi/ mahāN are introduced in place of IA-affixes'

tuḍādhībhyaḥ saḥ (3.1.77) 36 'affix Ša is introduced after verbal roots listed in the group headed by tuḍ 'to torment'.

tumarthāc ca bhāvavacanā (2.3.15) 160 'a caturūḥ 'dative' occurs after a nominal stem which terminates in an affix with the denotatum of action and which is synonymous with denotatum of tumUN'

tulīyāsoprayatnām savarnām (1.1.9) 121 'a sound which shares same articulatory effort in the mouth with another is termed homogeneous (savarṇa)'

tīrācābhīyāṃ kartiṣṭe (2.2.15) 28 'a pada which ends in the genitive (saśṭhi) and denotes karmāṇa 'object,' does not combine in a tātprūṣa compound with a syntactically related nominal pada which ends in a sUṛ, contains a stem in irC and aks, and denotes kartiṣṭe'

tīryā tātprūṣaḥ gunavacanena (2.1.30) 201 'a pada which ends in the instrumental (tīryā) combines, optionally in a tātprūṣa compound with a syntactically related pada which ends in a sUṛ, and either denotes (i) a quality produced by the pada ending in tīryā, or (ii) contains artha'

tīryāsaptāmāyoh bahulam (2.4.84) 199 'a tīryāḥ and saptāmī is variously replaced with am when it occurs after an aṣṭāśṭāvīm compound ending in a'

tyāṃśyakshe kāśyapasya (1.2.25) 118 'affix Kāṝā, in the opinion of Kāśyapa, is not treated as marked with Kas an ṣ when it occurs with iṬ after verbal roots ṭṛṣā 'to be thirsty, ' mrṣā 'to endure, tolerate' and krṣā 'to be lean'

te tadṛīṣṭe (4.1.172) 104 'the tadṛīṣṭa affixes which occur after a syntactically related nominal stem ending in the genitive and naming a janaṇa pada with the signification of a kṣaṭriya are termed tadṛīṣṭe'

tena kriṣṭe (5.1.37) 64 'a tadṛīṣṭa affix occurs as specified to denote the sense of kriṣṭe after a syntactically related nominal stem which ends in the instrumental (tīryā)'

tena tulāṃ kriṣṭe ca vaṭī (5.1.115) 65 'the tadṛīṣṭa affix vaṭī occurs to denote the sense of tulā 'same, equal' after a syntactically related nominal stem ending in tīryā 'instrumental,' provided what is tulā is also kriṣṭe 'action' '

tena divyaṇtī ᵐhaṇiṣṭe jayati jītām (4.4.2) 64 'the tadṛīṣṭa affix ᵐhaṇiṣṭe occurs after a nominal stem which ends in the instrumental (tīryā) when derivatives signify divyaṇtīi '...sports, plays,' ᵐhaṇiṣṭe '...digs,' jayatii '...wins' and jītām '...won' '

tena rakṣāṃ ṛigāi (4.2.1) 63 'a tadṛīṣṭa affix, particularly ṛigāi (3.1.83 prāṇa ṛigāi) ṛ, occurs after a syntactically related nominal stem which ends in tīryā and signifies 'color' when the derivative denotes 'colored by that'

tena saheṭe tulāyoga (2.2.28) 187 'a pada constituted by saha 'with' combines, optionally, in a bahuvrīhi compound with a pada which ends in the tīryā 'instrumental' provided referring of both share some relationship with the action'

tyāḍādānmāḥ (7.2.102) 84 'the final sound segment of an āṅgā constituted by items enumerated in the list headed by tyāḍ 'that' is replaced with a when an affix termed vibhakti follows'

tricaturbhiḥ sthīreṇaṃ tīṣṭeṣṭaḥ (7.2.99) 132 'tisṛ and caṭaṣṛ come in place of an āṅgā, namely, tri and caṭur, when they are used with the signification of feminine and an affix termed vibhakti follows'

tres trāyaḥ (6.3.48) 48 'the final sound segment of tri is replaced with trāyas when a constituent denoting samkhya 'number,' with the exception of aṣṭi 'eight,' combines to follow and the compound is not a bahuvrīhi'

tres trāyaḥ (7.1.53) 63 'trāya comes in place of an āṅgā, namely, tri 'three,' when the genitive plural ṛām follows'

dāder dhātor ghaḥ (8.2.32) 85 'the h of a verbal root which begins with d is replaced with gh when h occurs at the end of a pada, or occurred followed by a nominal denoted by the abbreviatory term jhāl.'

dāhā ghaḥ adīp (1.1.20) 121 'roots which yield a form in dā and dhā, except for dāP 'to cut' and dāP, are termed glu'
rājakṣntaḥ (1.4.35) 148 'a kāraka which serves as a creditor is termed sampradāna when
dhāri 'to owe (causative of dhārā)' is used'
dhinukṣyayor a ca (3.1.80) 47 'affix u occurs after verbal roots dhīnvot 'to please, 
satisfy,' be 'satisfied' and kṛṣṇaḥ 'to hurt, injure' when a sīrauḍhātuḥa akṣara which denotes kārta follows; 
additionally, a root-final sound is replaced with a'
dhruvam apūrtā padānām (1.4.24) 48 'a kāraka which serves as dhruvam 'fixed (point of reference)'
is termed apūrtam 'ablative' when apūya 'movement away from' is denoted'
dhīvinkṣenā āśeṣa (2.1.42) 189 'a kāraka which serves as a āśeṣa compound with a syntactically related kāraka which ends in a sūp and contains a constituent.
ent denoting dhvāṅkṣa ‘crow,’ provided contempt (kṣepa) is denoted
na kroṣādivahvacaḥ (4.1.56) 136 ‘affix Niś does not occur after a nominal stem which ends in
an upasārjana ‘secondary’ constituent with the signification of svaṅga ‘one’s limb’ and is
either listed in the group headed by kroṣa ‘lap, flank of a horse,’ or else, consists of many
vowels’
naḥ (2.2.6) 204 ‘a pada constituted by naNi ‘not’ combines, optionally, in a taotpuruṣa compound
with a syntactically related pada which ends in a sUP
naddhīṣa ca (2.1.20) 128 ‘a pada which denotes sanśākhāya combines in an avayāśibhava compound,
optionally, with a syntactically related pada denoting nadi ‘river’
na dhātulopa ardadhāṭātke (1.1.4) 125 ‘vowels denoted by guṇa and vrddhi do not come in
place of an Ik when an ārdhadhāṭaika affix, which conditions deletion of part of the root,
follows’
na nirdhārana (2.2.10) 202 ‘a pada which ends in the genitive (saṣṭha) and denotes nirdhārana
‘setting apart, singling out’ does not combine in a taotpuruṣa compound with a syntactically
related pada ending in a sUP
naprūṇasakṣaya jhalya acaḥ (7.1.72) 109 ‘augment nUM is introduced after last among vowels of a
neuter presuffixal base (anīga) which ends in a sound denoted by the abbreviatory sym-
bol phaI, or ends in a vowel (aC)
naprūṇakāḍa anayārasyaṃ (5.4.109) 199 ‘the tadddhīta affix TaC occurs, optionally, after a neu-
ter nominal stem which ends in an and constitutes the final constituent of an avayāśibhava
compound’
naprūṇakāḍe bhāve kiṣṇa (3.3.114) 41 ‘affix Kīa occurs after a verbal root when root-sense is de-
noted in the neuter
na bahūvṛhau (1.1.29) 109 ‘items listed in the group headed by sarva ‘all’ are not termed
sarvanāman when they occur in a bahūvṛhi (2.2.23 ṣeṣo bahūvṛhiḥ) compound’
na humāṇīkṣaya (1.1.63) 66 ‘an operation relative to a pre-suffixal base (anīga 1.4.13 anīgasya)
do not apply if the following affix goes through deletion via that (a term) which con-
tains LI’
na vai viśhāya (1.1.44) 114 ‘or not (na vai) is termed viśhāya (option)’
nas tadddhīte (6.4.144) 199 ‘the ti (1.1.64 acomtyādi ti) of an anīga, termed bhā, which ends in n is
deleted via LOPA when a tadddhīta affix follows’
nāj jhalau (1.1.10) 121 ‘sounds denoted by aC (vowels) are not termed savarnya ‘homogene-
ous’ with sounds denoted by haI. (consonants)’
nāryayāśibhava aṭaḥ panramyāḥ (2.4.83) 196 ‘a sUP which occurs after an avayāśibhava compound
ending in aI is not deleted; a sUP, if not a pāhram ‘ablative,’ is replaced with an, instead’
nāsikādaśaṃsajayānādaniśamakāryānīgīc ca (4.1.55) 136 ‘affix Niś occurs, optionally, to denote
feminine after a nominal stem which ends in an upasārjana with the signification of
svaṅga ‘one’s limb,’ namely, nāsikā ‘nose,’ udara ‘belly,’ oṣṭha ‘lip,’ jaṅghā ‘thigh,’ danīa
‘tooth,’ karṇa ‘ear’ and śīṅga ‘horn’
nityam kṛdājjivayoh (2.2.17) 28 ‘a pada which ends in the genitive (saṣṭha), obligatorily, com-
bines in a taotpuruṣa compound with a syntactically related pada which ends in a sUP
and contains a, provided krīḍa ‘sport’ and jīṅka are denoted’
niṣṭha (2.2.36) 121 ‘a pada which contains a stem in niṣṭha (2.5.102 niṣṭha) is placed first in a
bahūvṛhi compound’
niṣṭha (3.2.102) 159 ‘an affix termed niṣṭha (1.1.26 kiaṛtąvati niṣṭha) occurs after a verbal root
when action is denoted in the past’
nispravāṇī ca (5.4.160) 92 ‘the tadddhīta affix kaP does not occur, via nīyātava, after a termin
termined bahūvṛhi, namely, nispravāṇī, a just about ready basket’
nicair anudāṭaḥ (1.2.30) 122 ‘a vowel which is articulated (with a) lower (pitch) at its place of
articulation is termed low-pitched (anudāṭa)’
niṛ ṁ p (8.3.10) 164 ‘niṛ is replaced with ṛU when ṛA follows and close proximity between
sounds finds its scope’
neti (7.2.4) 137 ‘a vowel termed vrddhi does not come in place of the vowel of an anīga ending
in a consonant when it-initial sI/C followed by an affix termed parasmaitpadā follows’
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parikītiṃśatitrīṃsaccaturīṃsätaparśčāatasāṣṭisapṭaśāṃtinauvedaśātam (5.1.59) 118 'the nominal stems parākīti 'row, meter,' vimśatī 'twenty,' triṃśat 'thirty,' catvārīṃsāt 'forty,' paṃcāśat 'fifty,' śaṣṭi 'sixty,' saptaśat 'seventy,' aṣṭi 'eighty,' navatī 'ninety,' and saха 'hundred' are derived via niptātana to denote a measure'

pāncāmī bhaya (2.1.37) 202 'a pada which ends in the ablative (pāncāmī) combines, optionally, in a tātpuruṣa compound with a syntactically related pada which ends in a sūP and contains bhaya 'fear'

padasya (8.1.16) 62 'of that which is termed a pada'

padāntasya (8.4.37) 138 'a replacement in n does not come in place of a n which occurs at the end of a pada'

pārvaḷaṁ ṭīṅgaṁ dvandvatiṇṭaṁpatrasyaḥ (2.4.26) 41 'gender of a dvandva and tātpuruṣa compound is assigned in accord with the gender of its final constituent'

paraś ca (3.1.2) 45 'and an affix occurs after...

paraḥ saṃvākṣaṇaḥ saṃbhītā (1.4.109) 196 'extreme proximity between sounds is termed saṃbhīta'

paraśapadānāṁ nalaṭusussathalathusanalvamāḥ... (3.4.82) 'NaI, atus, us; thal., athus, a; NaI, va and ma come in place of a replacement of LI term paraśapadā'

parīṇaḥ asoḍhāḥ (1.26) 147 'a kāraṇa which serves as asoḍhā 'unbearable' is termed aṭṇāda when action is denoted by verbal root ji 'to win' used with the preverb pari'

parīṇaḥ chandasi bahulam (6.2.199) 195 'the initial syllable of a following constituent, namely, sakha, et cetera, is, variously, marked with udāta in the Vedic'

pārśvapravāne sampradāṇam anyatarasayām (1.4.44) 123 'a kāraṇa which serves as a means par excellence is, optionally, termed sampradāna 'dative' when pārśvapravāna 'hiring on stipulated wages' is denoted'

paripākāya dhāni (5.1.17) 64 'the taddhīta affix dhāni occurs to denote the sense of genitive, or of locative, after syntactically related nominal stem paripākā 'noat, ditch' when ending in the nominative, provided the same is in syntactic coordination with sāyā to denote the sense of 'there is a possibility of that' or 'it is possible in there'

parinivābhāya svastivāsasatvasahasatvasahāyām (8.3.70) 65 'a mūntakaṇya 'retroflex sound' comes in place of the s of verbal roots seva, siya, saya, sīvū, saha, sūT, sū, and svaṇja, when used after the preverbs pari, ni, and ni, when aT, and also when an abhyāsa intervenes in close proximity'

pātre samātādasāya ca (2.1.48) 202 'items enumerated in the list headed by pātresamī are also termed tātpuruṣa when kṣepa 'censure' is denoted'

pādātāatasaya samātāyāyādītāyasāvātāpasa ca (5.4.1) 64 'the taddhīta affix vuN occurs after a nominal stem which ends in pada 'quarter' and sāta 'hundred' and begins with a number (samātāya) with an additional provision that the final sound segment of pada and sāta be replaced with IOPA, when derives denote vīpā 'repetition, pervasion'

pāṭyāyanīvānākanādaḥāṇīyā mānahaṭvarvavāvāssāmaṇāṣa (3.1.129) 119 'affix NyaT occurs to derive pāṭyā, sānṇāya, nāhyāya and dhāhyāya when derives denote mūna 'standard of measure,' hana 'oblation,' niṣāna 'residence' and sāmidhāni 'a particular hymn'

pāṭyāyanīvānākanādaḥāṇīyā mānahaṭvarvavāvāssāmaṇāṣa (3.1.129) 119 'the words pāṭyāya, mātula, mātumaha and pāṭumaha are derived, via niptātana'

pāṃvatkarṇadhāravaṣṭīyādeśīṣu (6.3.42) 98 'the form of a nominal which denotes feminine, does not end in affix uN and shares an identical base for usage with a corresponding masculine, is treated as that of its masculine when this same combines in a karmadāhāraṇya compound and affixes jāyat and deśīṣat follow'

pāṃsī samajītyām ghaṁ prīyaṅca (3.3.118) 41 'affix GHa occurs, generally, after a verbal root when the derivate names a karana, or adhikaraṇa, in the masculine'

pugantalagūpedhasya ca (7.3.86) 86 'a replacement in guṇa comes in place of the iKvowel of an anīga which ends in augment pUK, or contains a vowel termed laghu as next to its last, when an affix termed sāvadāhātuka and ārdhādāhātuka follows'

puṭṭī caśme (3.2.122) 117 'affix LUN occurs, optionally, with LAṬ after a verbal root which co-occurs with pari, and is not used in conjunction with sma, provided the action which is not current is denoted in the past'
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pūgaṁḥo  grāmāṇjaśīrpaṁ  (5.3.112) 124  'the taddhita affix  Nyaya occurs after a nominal stem which signifies pūga and does not include grāmaṇi as its initial constituent'
pūrṇayuṣavasitāhārasadāryayanasaṃānādhihkaranaṇa (2.2.11) 203  'a pada which ends in the genitive (saṣṭha) does not combine in a taitpurusa compound with a pada which ends in a suP and entails pūrṇa that which ends in a pūrṇa suffix, guṇa that which denotes quality, sūkṣma that which denotes satisfaction, sat that which ends in affixes termed sat, avyaya indeclinable and saṃānādhihkarana that which is used in syntactic co-ordination'
pūrvaikalakarasavairajāparvānānavakavālaśaṃānādhihkaranaṇa (2.1.49) 205  'a pada which ends in a suP and contains a stem that either denotes pūrvakālā something which naturally precedes the other, or is constituted by ekā 'one, sarva all, javat aged, puraṇa ancient, old, nava new and kevāla only, combines optionally in a taitpurusa compound with a syntactically related coreferential pada which ends in a suP'
pūrvaśiddham (8.2.1) 5  'that which follows, here, is treated as if suspended in view of what precedes'
pūrvaparāsvardakṣnetarāpārādhakarani vavyāvahāryām asamjayāyām (1.1.34) 39  'items such as pūrva, para, avara, dakṣina, uttara, avara and adhara are, optionally, termed sarvanāman when (i) operations relative to fas are to be performed, and (ii) what is being denoted is vavyāvahārya relative difference, or location in time or space, and not a name (samjayā)' pūrvavat sanak (1.3.62) 114  'an aṣmanepada affix occurs after a verbal root ending in affix san, in a manner similar to which it occurs after its non-saN counterpart'
pūrvapadāsvaramanārthakalakslamaparnamāna śākṣyavat (2.3.31) 201  'a pada which ends in the instrumental (triya) combines in a taitpurusa compound, optionally, with a syntactically related pada which ends in a suP, and contains pūrva, sadṛṣya, sama, uttana, and its synonyms, kalahā, miśra and śākṣya' pūrvapārādharotarkameśinaśākṣyāhkarana (2.2.1) 204  'a pada which ends in a suP and contains pūrva, avara, adhara, or uttara, combines optionally with a syntactically related pada which ends in a suP and refers to a single subject (ekādhikarana) with parts (ekadēśin)' pūrvvah bhūyān (6.1.4) 103  'the first of the two elements gotten via iteration is termed abhyāsa' p̄r̄a as upadāhā (3.3.98) 93  'affix yaT occurs after a verbal root which ends in a sound denoted by pu and contains aT in its penultimate position (upadāhā)
pratyaya (3.1.1) 45  'an affix ...'
pratyayalohe pratyayalakṣaṇam (1.1.62) 8  'an operation characteristic of an affix obtains even when the affix goes through deletion via LOPA'
pratyayasyathiśāśī∫purasyān (7.3.44) 178  'a short vowel, namely, ī, comes in place of an a which, in turn, occurs before k within an affix, provided ṗ, not used after a suP, follows'
pratyayasya laksitānā (1.1.61) 99  'non-appearance of an affix is termed LUK, ŚLU and LUP'
pratyāś caḥ śravaḥ pūrvasya kariṭā (1.4.40) 148  'a kāraka which serves as the agent of a prior action (of requesting) is termed sampradāna when śrū to hear is used with the preverb prati and āN'
prathamačaramatayāpārdhakaitpayanemāṇā ca (1.1.33) 86  'prathama first, carama last, aḷpa little, les, ardha half, kaitpayā some, nema several, and words which end in affix tavyaP (5.2.42 samkhyāya ...) as well, are, optionally, termed sarvanāman when operations relative to fas are to be performed'
prathamānirnīṣṭhaṃ samāsa upasarjanaṃ (1.2.43) 20  'that which is specified with the nominative (pratāhā) in formation of a compound is termed upasarjana (secondary)'
prāk kādāriṃ samāsa (2.1.3) 64  'that which is enumerative henceforth, prior to kādāra, (2.2.38 kādāriḥ karmadhārvave), is termed samāsa'
prāk kr̄ītāc chak (5.1.1) 64  'a taddhita affix, namely, cha, occurs, henceforth prior to kr̄īta (5.1.37 tena kriyam), after a nominal stem'
prāk stūd a dh vāyāve pi (8.3.63) 65  'a corresponding mūrdhanya, from here on prior to sita (8.3.70 parinibhyah sevasita), comes in place of a s which does not occur at the end of a pada, whether or not augment aT intervenes'
prāg ivāt kah (5.5.70) 65  'a taddhita affix, namely ka, occurs henceforth prior to ivye pratikṣetau (5.3.96), after a nominal stem'
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prāg hitād yat (4.4.75) 64 'a taddhīta affix, namely yat', occurs as specified, henceforth prior to hitād (5.1.11 tasmait hitam)

prāg diśa vibhaktiḥ (5.3.1) 65 'the taddhīta affixes which, from here on prior to diś (5.3.27 dikṣādebyaḥ ...), optionally occur after nominal stems are termed vibhakti'

prāg divratīḥ (6.1.83) 64 'a taddhīta affix, namely aN, optionally occurs, from here on prior to divratī (4.4.2 tena divratī...). After the first among syntactically related nominal stems'

prāg rīsvarān nīpātāḥ (1.4.56) 62 'what are here enumerated prior to rīsvarā (1.4.97 adhīrīvare) are termed nīpātas'

prāg vaiṣṭaḥ thān (5.1.18) 64 'a taddhīta affix, namely thāN, occurs after a nominal stem to denote the sense of affixes introduced by rules prior to that which contains vaiṣṭa (5.115 tena tulyaṃ...)

prāg vaiṣṭaḥ thāk (4.4.1) 64 'a taddhīta affix, namely thak, occurs henceforth as specified prior to vaiṣṭa (4.2.76 tadvaḥa...), after a nominal stem'

prātīpadīkāḥ arenaśeśasātmanamātanaṃpravahitaḥ (2.3.46) 55 'a pravahita 'first triplet of sU' occurs when only prātīpadīkāḥ 'stem-notation,' īngga 'gender,' prāmaṇya 'measure' and vacana 'number' is to be expressed'

prādāyata (1.4.58) 123 'items enumerated in the list headed by pra are termed nīpāta 'particle' when they do not denote saṭṭa 'thing'

prādiśa chandaśi (6.2.199) 167 'the initial (syllable) of a following (constituent), namely saktha, et cetera, is variously marked with udā́ṭha in the Vedic'

phalagrahīṁ ātmanābharīṁ ca (3.2.26) 199 'affix iOccurs via nīpātana, also, in deriving phalagrahīṁ and ātmanābharīṁ'

bahugunāvadudatisaṃkhyā (1.1.23) 'bahuh 'many' and gūṇa 'group, class,' and those which end in affixes vaiU (5.2.39 yaddatebhyaḥ ...) and diś (5.2.41 kīmaḥ ...) are termed saṃkhyā'

bhāvavirahīṁ pravacanaṃpadam (6.2.1) 64 'accent of the initial constituent of a bahuvrīhi compound remains as it originally was'

bhāṣya (6.4.129) 62 'of a bha (1.4.18 yaci bhām) of an ānaga'

bhāvakarmanah (1.3.13) 158 'an ātmaneśpadama affix occurs after a verbal root when bhāva 'state, root-sense' and karman 'object' is denoted'

bhāva ca (4.4.144) 65 'the taddhīta affix tātāl occurs in the Vedic, also, after nominal stems śiva, sām and ariṣṭa when bhāva 'root-sense' is denoted'

bhāya hetukaḥśeṣ (7.3.40) 97 'augment sUk is introduced to an ānaga, namely, bhī 'to fear,' when the signification is hetukaḥśeṣ 'fear to causal agent' and affix Ni follows'

bhātrāññīṁ bhayaḥ (1.4.25) 147 'a kāraṇa which serves as source of fear (bhayaḥ) is termed apādāna when verbal roots having the signification of bhī 'to fear' and ṛṇu 'to protect' are used'

bhāvandayo pādāṇe (3.4.74) 39 'the words bhīma, et cetera, derive, via nīpātana, when apādāna is denoted'

bhāyāḥbhāyuṇāḥ śavac ca (3.1.39) 47 'affix āṁ occurs optionally after verbal roots ṇībhī 'to fear,' āṁhi 'to be bashful, be ashamed,' DUḥkṛṇi 'to hold, provide,' and hu 'to perform sacrifice' provided LIT follows, and the usage is not from the mantra part of the Vedic; in addition, these roots undergo operations similar to those which occur when ŚU follows'

bhūvah prabhavahā (1.4.31) 123 'a kāraṇa which serves as source of origin for the agent of bhī 'to become' is termed apādāna'

bhūte (3.2.84) 63 'an affix, hereafter, occurs after a verbal root when the action is denoted in the past (bhūte)'

bhūvandayo dhāvavāḥ (1.3.1) 36 'verbal roots listed in the group headed by bhū, and others of its like, are termed dhāvā'

bhṛṇāṁ ti (7.4.76) 47 'a short comes in place of the long final vowel of an ānaga, also when affix Col follows'

bhṛṣādirhyāṃ bhūvoc arceve lopa ca halah (3.1.12) 46 'affix KyaN occurs, optionally, to denote the sense of bhī 'to be, become' after nominal stems enumerated in the list headed by bhṛṣa 'bountiful, bright' when the stems do not end in affix Col; in addition, any final consonant of the stem goes through deletion by LOPA'
bhrasajayopadhyayo ram anyatarasayam (6.4.47) 120 'augment rAM is introduced, optionally, in place of the sequence of r and next to the last sound segment of an aṅga, namely, bhrasij 'to roast,' when an affix termed ārdhadhātukā follows'

bhrājābhāsādheruvaiduryottijājagūcāstuvastuvah kvañ (3.2.177) 64 'affix KalP occurs to denote karta after verbal roots bhrājR and bhāsR 'to shine,' dhruvā 'to injure,' ṅaṭa 'to shine,' urjA 'to be strong,' pī 'to fill,' jū 'to move' and sūN 'to praise' used with grāva, when the agent performs the action at the current time because of his nature, sense of duty, or skill'

bhrāṇi ca jayasya (4.1.164) 176 'the offspring of a grandson, and any other thereafter, is termed yavan, also when his older brother (instead of his father, or any other like him) is alive'

maya niyam vā (8.3.33) 138 'a replacement in vā comes, optionally, in place of uN when uN occurs after a sound denoted by māY and aC follows in close proximity'

māyāravayāyakālayā ca (2.1.72) 205 'nominals enumerated in the list headed by māyāravayāyaka 'as cunning as a peacock' are also termed taḷpuruśa'

maskaramaskarino ... (6.1.152) 119 'the words maskara and maskari are derived, via niṭātana, with introduction of augment suT when the signification is ven 'bamboo' and pariśrojakā 'wandering ascetic,' respectively'

māturusāmakhyāsādhrupūrūyāyāh (4.1.115) 107 'the taddhita affix aN occurs after the syntactically related nominal stem māṭr 'mother,' where its final r is concurrently replaced with u, provided the derivate denotes an apāṭya 'offspring' and māṭr is used in combination after a constituent denoting saṃkhyā 'number,' or is used after sam and bhadra'

miḍ aco niyāt parah (1.4.47) 96 'that which is marked with M as an it is attached after the last vowel'

mukhanāśākṣiavancanā nuṇāśikā (1.1.8) 121 'that which is articulated through mouth and nose, at once, is termed anuṇāśika'

miṭr vṛddhiḥ (7.2.114) 138 'a vowel termed vṛddhi comes in place of the iK-vowel of an aṅga constituted by miṭ 'to cleanse'

yaci bham (1.4.18) 79 'a form is termed bha when a non-sarvanāmaśthāna affix termed svādi beginning with y or a vowel (aC) follows'

yaṇa ca (4.1.16) 176 'affix NiP also occurs to denote feminine after a non-secondary (anupasārjanava) nominal stem which ends in yaN'

yaṇhī ca (4.1.101) 176 'affix bhaK occurs after a syntactically related nominal stem which ends in affixes yaN and iN, provided a descendant termed gotra is denoted'

yat ca vṛddhāryam (2.3.41) 160 'a genitive (saṣṭhi) and locative (saṭṭam) also occurs after a stem which denotes many from among whom one is singled out'

yatadelekhyaḥ parimāṇe (5.2.39) 121 'the taddhita affix vaṅUP occurs to denote the sense of saṣṭhi after syntactically related nominal stems yat 'that which' and itad 'this' when they end in the nominative (pṛthamaṇ) and occur in syntactic coordination with parimāṇa 'all inclusive measure'

yatihāsamakhyaṃ anudaśaḥ samānām (1.3.10) 36 'assignment of equivalency of items of equal number in sets is assigned in accord with order of enumeration'

yaro 'nuṇāsike 'nuṇāśikovai (8.4.45) 85 'a pada-final sound denoted by yaR is optionally replaced with an anuṇāśika when this same follows in close proximity'

yavayavakāṣaṣṭihād yat (5.2.3) 159 'the taddhita affix yaT occurs to denote the locus of bhavamā 'being, becoming' after syntactically related nominal stems yav 'barley,' yaṭakā 'ibidem,' and saṣṭika 'a variety of rice ready for harvest in sixty days' when they end in the genitive (saṣṭhi), provided kṣetra 'field' forms the locus'

yasmat pratyayadvidhis tadādi pratyaye ngam (1.4.13) 86 'a form which extends up to the affix, and begins with that after which the affix is introduced, is termed anga, provided when the affix follows'

yasvet ca (6.4.148) 167 'the final sound segment of an aṅga termed bha which ends in i and a, goes through deletion by means of LOPA when i or a taddhita affix follows'

yāḍ apiḥ (7.3.135) 136 'augment ñT is introduced to an affix which is marked with N and occurs after an aṅga terminating in aP'

yuvr anākha (7.1.1) 63 'affixes yu and vṛ, in relation to an aṅga, are replaced with ańa and ańa'
yuṣmadasmadā anāyatasaṃ khaṇ ca (4.3.1) 122 'the taddhīṭa affix khaṇ, and cha as well, occurs optionally after a syntactically related vṛddha nominal stem yuṣmad and asmad when derivates denote a residual meaning'
yuṣṭ hairstyles nādi (1.4.3) 123 'forms which denote feminine and end in i and u are termed nādi'
yena viṁśah tadantasya (1.1.72) 130 'that by means of which a provision is made denotes an item which ends in that'
yogajramāṇa ca tadabhave 'darśana' (1.2.55) ?? 'if association with a place of residence (nivīśa) is the standard for assignment of the term, it should no longer be assigned when the association disappears'
raṣṭhīṃ naḥ saṁānapade (8.4.1) 63 'a replacement in n comes in place of n which occurs preceded by r and s in close proximity within the same word'
rādhikṣor yasya vijrāṣṭah (1.4.39) 148 'a kāraka which serves as one about whom many inquiries are made is termed sampradāna when rādhā 'to pṛṣhayes' and ikṣa 'to look, observe' are used'
rucyartāṣṭāṃ priyamāṇaḥ (1.4.33) 148 'a kāraka which serves as one who is pleased (priyamāṇa) is termed sampradāna when verbal roots having the specification of nuc 'to please' are used'
rudhādībhyaḥ śnam (3.1.78) 'affix ŚnaM occurs after verbal roots enumerated in the group headed by rudhīR 'to hold down, round up' when a sāraṇdhiṣṭuca affix used with the denotation of kartr follows'
rgūkṣṭaṃ śvul bāhulam (3.3.108) 80 'affix śvul occurs, variously, after a verbal root to denote action in the feminine when the derivate names a disease'
lah karmi ca bāhve cākakarmeśhbhyāḥ (3.4.69) 54 'a LA-affix is introduced after a transitive verbal root when agent (kartr) and object (karmi), and after an intransitive verbal root when agent and root-sense (bhāva), are to be denoted'
lah parasmaipadam (1.4.99) 27 'a replacement of LA is termed parasmaipad (active)'
lakṣṇaḥatsthetvā kriyāyāḥ (3.2.126) 185 'affixes Śārd and ŚānaC occur after a verbal root in place of LAT when action denoted by the root constitutes a lakṣaṇa 'characteristic mark,' or hetu 'cause,' of some other action'
lataḥ sātrāṃcāvopratikamā saṁāṇādhikaranā (3.2.124) 116 'affixes Śārd and ŚānaC cooccur after a verbal root in place of LAT when action is denoted at the current time, and when LAT is not coreferential with a pada which ends in the nominative (prahāma)'
lasāko vīadāde (1.3.8) 123 'an initial I, Ś, and sounds denoted by the abbreviatory term kU (velar stops and nasal; 1.1.69 aṣvati savarṣasya cāprāṣyaḥ), are termed when they occur in the first citation (upadāga) of an affix other than a taddhīta'
līṇaḥ sālopo nātasya (7.2.79) 194 'the non-final s in a sāvaṃdhūtaka replacement of affix LIṆ goes through deletion by LOPA'
līśas taśhayor eśīre (3.4.81) 115 'the ta and jha which replace LIṬ are replaced with ēsand ireC, respectively'
līśi dhātor anabhyāsaya (6.1.8) 113 'that part of a root which is formed with its first among vowels, or formed with its second if the root begins with a vowel, is iterated in two, provided affixed LIṬ follows'
līśī anvātaraśayī (2.4.40) 116 'ad is, optionally, replaced by ghaśI, when an āndhādhātuca replacement of LIṬ follows'
līśī abhyāsaśabhyāsaś (6.1.17) 66 'the abhyāsa of verbal roots enumerated beginning with vacl to speak' and grahī 'to hold, seize' goes through samprasāraṇa when LIṬ follows'
luk taddhīta luki (1.2.49) 47 'the feminine affix of an upasaṛjana 'secondary' also goes through deletion via LUK when a taddhīta affix goes through deletion via LUK'
līg vī duḥadhālīkaghaṁatmanepade dantye (7.3.73) 100 'a deletion by LUK comes, optionally, in place of ksa of an anīga, namely, duḥkha, dihitakha, līkha and guḥkha, when an ātmānepada affix beginning with a dental sound segment follows'
lūṭaḥ pratikamasā dārvarasas (2.4.85) 97 'the third-personal replacements of itīN are replaced with Diṇ, rau and ras, respectively'
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lupi yautkavod vyaktivacane (1.2.51) 100 ‘the original number and gender of a base is retained when there is deletion of a taddhita affix, via LUP’

lopaḥ śakalavaya (8.3.19) 116 ‘a pada-final v or y which occurs after a or ä is, in the opinion of Śākalya, replaced with LOPA when a sound denoted by ač follows in close proximity’

vaśisvapiyajālindaṁ kī (6.1.15) 116 ‘verbal roots var ‘to speak,’ Nīsasa ‘to sleep,’ and also roots listed in the group headed by yag, go through samprastaraṇa when an affix marked with K follows’

vayasi prathame (4.1.20) 167 ‘affix NI p occurs to denote feminine after a non-secondary nominal stem which ends in -a and denotes the first stage of life’

vartamāne laj (3.2.123) 63 ‘affix LA T is introduced after a verbal root when action is denoted at the current time’

vā chandasi (3.4.88) 137 ‘affix athuC is introduced after a verbal root marked with T U as an it when bhāva ‘root-sense’ and a kāraka other than kārya is denoted’

vā dántaśīniśātāstaspatyācchanañjānpīṭh (7.2.27) 119 ‘dānta, śānta, śīna, śrīnaḥ, sparśa, channa, and jñānīta are divided, optionally via nīśātana, from verbal roots dam, ṣam, pūrṇa, daśa, spai, chad and jñāṇī’

vānta yi pratyayu (6.1.79) 130 ‘a replacement with v at the end, i.e., av and āv, occurs when a y- initial affix follows’

vāmi (1.4.5) 116 ‘except for stri, forms which terminate in i, u and denote feminine are, optionally, not termed nadi when they have a replacement in pAn, uAN, and occur before the genitive plural ending ām’

vīraṁyūrthānām ipitā (4.1.27) 148 ‘a kāraka which serves as that which is desired is termed apādāna when verbal roots having the significance of vīrāṇa ‘warding off’ are used’

vā lī (2.4.55) 116 ‘cakṣIN ‘to speak’ is replaced with khyāN when an ārthadhātukaka affix follows’

vā sarīpo ‘striyām (3.1.94) 51 ‘a formally dissimilar (asarīpa) affix introduced by an exception rule in this domain of dhāhā, optionally, blocks introduction of its general counterpart except when the affix relates to the domain of rules which allow derivation of feminine forms’

vā suṣaḥ āpiśade (6.1.92) 118 ‘a single replacement in vrddhi, in the opinion of Āpiśālī, comes, optionally, in place of both, the final a of a preverb and initial r of a verbal root when svarvid finds its scope’

vīhaṁyānādiṣu (2.2.37) 208 ‘a pada which contains a stem in niṣṭā is placed first in a bahuvrihi compound’

vipratiṣedhe paraṁ kāryam (1.4.2) 5 ‘apply the rule which is subsequent in order when conflict among rules of equal strength obtains’

vibhakti ca (1.4.104) 69 ‘each triplet of sU p and tIN is also termed vibhakti’

vibhāṣā (2.1.11) 194 what follows hereafter is vibhāṣā ‘option’

vibhāṣā ‘abhyasaṇīśīrṣya (6.1.26) 117 ‘verbal root ṢāvīN, when used after the preverb abhi and ava, goes through samprastaraṇa, only optionally’

vibhāṣā jasi (1.1.32) 39 ‘items listed in the group headed by sarva are, optionally, not termed sarvanāman when they combine in a dvandva compound and operations relative to fas are to be performed’

vibhāṣā diksamāsa bahuvrihau (1.1.28) 109 ‘items listed in the group headed by sarva are, optionally, termed sarvanāman when they combine in a bahuvrihi compound formed with constituents denoting dī ‘direction’’

vibhāṣā tuñjābih (2.4.50) 116 ‘IN is replaced with gāN when an ārdhadhātukaka replacement of ĹUN and LIT follows’

vibhāṣā suādh (6.1.50) 115 ‘verbal root ṬUośol ‘to swell’ goes, optionally, through samprastaraṇa when affixes LIT and yaN follow’

vibhāṣāppadena (1.3.77) 114 ‘an utmanepada affix occurs, optionally, after roots used with a co occurring pada which denotes the fruit of the action accruing to the agent’

vibhāṣoṣṭotara (1.2.3) 115 ‘an affix with tT as its initial is, optionally, treated as marked with N when the same occurs after verbal root urṇIN ‘to cover’
vīrāma' vasānam (1.4.110) 124 'a cessation of speech (vīrāma) is termed avasāna (termination)'

vīrānapati vīrānaya bahulam (2.1.57) 207 'a pada which ends in a sūP and denotes a qualifying property (vīrānapati) combines, variously, in a tatpurusa compound with a syntactically related referential pada which ends in a sūP and denotes the object so qualified'

vyuddhinimittaśaya ca taddhitasāvaraśakāhā (6.3.39) 151 'the form of a nominal which denotes feminine, shares identical bases with a corresponding masculine and ends in a taddhita suffix conditioning vyuddhi, is not treated as that of its masculine. provided this taddhita prefix was introduced with the specification of something other than rakta 'colored by means of... (4.2.1 tena raktaṁ rśigā) and viśāra 'a modification of... (4.3.134 tasyantākaṁ)'

vyuddhir ādaic (1.1.1) 2 'ā, ai and au are termed vyuddhi'

vyuddhir ecī (6.1.88) 134 'a single replacement in vyuddhi comes in place of both, a sound denoted by the abbreviated term ec (e, o, ai, au) which follows a and the a which precedes ec, in close proximity (samhitā)'

vyuddhiyasyācā samād cva vyuddham (1.1.37) 103 'that from among whose vowels the first is vyuddhi is termed vyuddha'

vyuddhetkosładādānīyam (4.1.169) 202 'the taddhita prefix NyāN occurs to denote apatya after a syntactically related nominal stem which ends in the genitive (saṣṭhi) and names a janapada 'principality, cluster of villages' with the specification of a kṣatrya, provided the base is either termed vyuddha or ends in i, or else is constituted by kosala and ajīda'

śaṅkisaḥ co (3.1.99) 93 'affix yaT occurs, also, after verbal roots śakl, 'to be strong, capable' and sahA 'to endure, forgive'

sabdavairāk bhārata-karmavegehebhyaḥ karaṇe (3.1.17) 22 'affix KyaN occurs optionally to denote karaṇa 'doing' after śabda 'sound, noise,' vaira 'hostility,' khalā 'quarrel.' abhra 'cloud,' karna 'sin' and megha 'cloud' when these denote the object of making or doing'

śāntas pracaryānīyam (8.3.35) 120 'a visarjaniya is replaced with visarjaniya when a sound denoted by khaR, itself followed by another denoted by ādṛ, follows in close proximity'

sā hau (6.3.85) 82 'an anīga, namely, śas is replaced with śā when affix hi follows'

śi sarvanāmāsthānam (1.1.42) 111 'Śi (a substitute of the nominative and accusative plural endings fas and Sā after neuter stems) is termed sarvanāmāsthāna'

śīheritance (6.1.27) 117 'verbal root śī is optionally replaced with śī, via nipātana, when it is used with the specification of ṭākā 'cooking,' and when affix Kta follows'

śekunādnām (7.1.59) 97 'augment nUM is introduced to an anīga constituted by a root enumerated in the group headed by mulc, 'to release' when affix Sā follows'

śēṣit kartarī parasmaipadam (1.3.78) 69 'a parasmaipada affix occurs after the removal of roots when agent (karti) is denoted'

śēṣe (4.2.92) 62 'in the sense of other than one already specified'

śēṣo ghy asakhi (1.4.7) 123 'the remainder of forms which end in i and u, with the exception of saκhi 'companion,' are termed ghī'

śēṣo bhavvṛtiḥ (2.2.23) 135 'that which is not already specified is termed bhavvṛti'

śnassor allopah (6.4.111) 82 'the a of ŚnaM, and that of verbal root as, goes through deletion, via LōPA, when a sārvadāsūka affix marked with K and N as an i follows'

śnān nālopah (6.4.23) 79 'a n which follows after Śna is deleted by means of LōPA'

śravāvṛṣhpārṣhāganurṇūdāhāsūvāditasāyaparnarvasahastavisākhāsūvakahulāhulāḥ (4.3.34) 101 'a taddhita prefix which occurs after syntactically related nominal stems śravāvṛṣhā, phalguṇi, anurūdha, svātī, isya, pranavasas, hasta, visūkha, aṣādha and bhulī goes through deletion via LUK'

ślāghahuvvāsthānapam . . . (1.3.34) 148 'a kāraka which serves as someone whom one wishes to be aware of is termed sampradāna when verbal roots ślāgha 'to praise,' hunā 'to hide,' śthā 'to stay' and śapā 'to curse' are used'

ślau (6.1.10) 47 'that part of a root which is formed with its first vowel, or formed with its second if the root begins with a vowel, is iterated to become two if not already iterated, when ŚLU follows'

saṣṭhi (2.2.8) 202 'a pada which ends in the genitive (saṣṭhi) combines, optionally, in a tatpurusa compound with a syntactically related pada which ends in a sūP'
śāṣṭhi 'seṣa (2.3.50) 68 'a genitive occurs after a nominal stem when the remainder (śṛṣṭa) is to be expressed'
śāṣṭhāyukta chandasi vā (1.4.9) 45 'pati, in the Vedic, is optionally termed ghi when it occurs in
connection with a word ending in the genitive'
śāṣṭhi śānteyogī (1.1.49) 45 'a genitive (śāṣṭhi), not interpretable otherwise, denotes 'in place of'
śāmānī sañ (1.1.24) 64 'number words which end in s and n are termed sañ
śayāha samprasārāṇam prataraṇāyās tatprataraṇā (6.1.13) 79 'ŚyāN goes through samprasārāṇa when
prataraṇa and prataraṇ follow in a tatparasāra compound'
samyogeticasya taphā (8.2.23) 8 'a deletion by LOPA comes in place of the final sound segment
of a pada which ends in a conjunct'
samyogeta guru (1.4.11) 123 'a short vowel, termed laghu, is termed guru when it occurs before a
conjunct (samyogeta)'
samhitāyam (6.1.72) 63 'when close proximity (samhitā) between sounds obtains'
samkhyaśāryayāsannādārushtikasamkhyaḥ samkhyaṁ (2.2.25) 208 'a pada which ends in a sUänd
contains an avyaya, or contains asanma 'proximate,' adīra 'not far, near,' adhika 'more'
and saṁkhya 'number,' combines, optionally, in a bahuvrhi compound with a pada which
ends in sU and contains a samkhya denoting things counted (samkhyaṁ)
samkhyaśārūnum dviguh (2.1.52) 124 'a compound which begins with a constituent denoting samkhya
'number' is termed dviguh'
samkhyaṁ atishadantaṁ kānt (5.1.22) 128 'the taddhita affix kānt occurs to denote the sense of
affixes introduced by rules prior to, and including 5.1.63 tad arhati, after a nominal stem
which ends in an appropriate ending and signifies a number, but does not have ti and
śaṇa as its final'
samāntāyam ca (6.3.38) 209 'the form of a nominal which denotes feminine, shares identical
bases for usage with a corresponding masculine, and is either a name (samāntā), or
ends in a pūrṇa suffix, is not treated as that of its masculine'
satyaśārāyāh satyasārāyāh kārakamādhye (3.2.25) 36 'affix NīC occurs after nominal stems satya 'truth,' pāśa 'snare,' riṣṭa 'form, shape, figure,' viṇī 'lute,' tiśa
'cotton,' tiṣṭa 'verse,' senā 'army,' loma 'hair on body,' tvac 'skin,' varma 'protective armor'
and cūrṇa 'powder'; it also occurs after verbal roots listed in the class headed by cv 'to
steal'
sa napnacakam (2.4.17) 206 'a dvīguh, or dvandva compound, which carries the denotatum of
one is termed neuter'
sanāyānta dhītavaḥ (3.3.32) 52 'forms which end in affixes saN, et cetera, are termed dhītau'
saptamāpyācyartināyāh kārakamādhye (2.3.7) 160 'a saptami 'seventh triplet, accusative' and paṇicami
'fifth triplet, ablative' occurs after stems denoting kāla 'time' and adhvau 'road' when a
span of time or distance between two participants (kārakas) is signified'
saptami vīśaye bauhurīhau (2.2.35) 192 'a pada which ends in the locative (saptami), or is a
qualifier, is placed first in a bauhurīh compound'
saptami sauvadaiḥ (2.1.40) 202 'a pada which ends in the locative (saptami), optionally, combines
in a tatparasāra compound with a syntactically related pada which ends in a sUänd
and contains sauvadha 'cunning, skilled,' et cetera'
saptami adhiharanā ca (2.3.36) 146 'a saptami occurs after a nominal stem when adhiharana
'locus' is not expressed otherwise; in addition, it occurs after diṛa 'far,' anitka 'near'
and their synonyms'
samarthaḥ padaśudhiḥ (2.1.1) 62 'an operation (śudhiḥ) concerning fully inflected words (pada)
is to be syntactically related (samartha)'
samarthāndhī prahamād vā (4.1.82) 62 'an affix termed taddhita occurs (from here on prior to
5.3.1 praṅ dīśo . . .) after the first among syntactically related nominal stems'
saminakaritkayathā pārvataki (3.4.21) 185 'affix Kīva occurs after a verbal root which denotes a
prior action relative to some subsequent action, provided both actions share the same
agent'
saminakaritkeshu tumun (3.3.158) 186 'affix tumUN occurs after a verbal root used in conjunc-
tion with the other which has the signification of is 'to wish,' provided both actions share
the same agent'

samāsasya (6.1.223) 79 'of that which is termed samāsa'

samāsēntāḥ (5.4.68) 78 'the taddhita affixes introduced, henceforth, occur at the end of a nominal stem termed compound (samāsa)'

samāhāraḥ svārītāḥ (1.2.31) 122 'that which is articulated with a combination of udātta and anudātta is termed svārītā'

samprastāraṇasya (6.3.139) 79 'the final sound of a word which has gone through samprastāraṇa is replaced with its long counterpart when a constituent combines to follow'

samprastāraṇaṃ ca (6.1.108) 115 'a single replacement similar to the preceding comes in place of both, the preceding samprastāraṇa vowel and the vowel which follows, when saṃhitā finds its scope'

sambodhana ca (2.3.47) 161 'a nominative (prathama) also occurs after a stem when sambodhana 'address' is denoted'

sarvanāmaṃ smai (7.1.14) 84 'affix Na, when occurring after a pronominal ending in a, is replaced with smai'

sarvasya due (8.1.1) 63 'two in place of a single whole'

sarvādīnī sarvanāmāni (1.1.27) 39 'items listed in the group headed by sarva are termed sarvanāman'

sasajauṣu ruh (8.2.66) 167 'the final s of a pada which ends in s, and also the s of saujus are replaced with ruḥ at the end of a pada'

sahanaśa vidyāmānapāravica (4.1.57) 136 'affix Niḥ also does not occur to denote feminine after an upasarjana 'secondary' nominal stem which denotes svānga 'one's own limb' and is used in combination preceded by sāha 'with,' naN 'not' and vidyāmana 'present, existent'

sahayuktē pradhāne (2.3.19) 160 'a trīyā 'third triplet' occurs after stems which denote apradhāna 'non-principal' and are used in conjunction with sāha 'with,' or its synonyms'

sāha svāpā (1.2.4) 137 'a pada which ends in a sūp combines in a samāsa 'compound' with another syntactically related pada ending in a sūp'

sādhakatamāma karaṇam (1.4.42) 45 'a kāraka which serves as the most instrumental means for accomplishing an action is termed karaṇa'

śīna mahātaḥ samyogasya (6.4.10) 133 'the next to the last vowel of a samyoga 'conjunct' ending in s, or the penultimate vowel of n of mahā, is replaced with its long counterpart when a sarvanāmasāhāna affix other than sambuddhi follows'

sā' mantritam (2.3.48) 239 'a form which ends in the nominative (prathama) and denotes sambuddhi 'address' is termed āmantrita'

sāmi (2.1.27) 201 'sāmi 'half' is combined in a tattprusā compound with a syntactically related pada which ends in a sūp and contains a stem ending in Kta'

sārvadhātukam ajī (1.2.4) 165 'a sārvadhātuka affix, not originally marked with P as an i, is treated as marked with N as an it'

sārvadhātukārdhadātukasyaḥ (7.3.84) 115 'a replacement in guna comes in place of the iK of an anṛga when an affix termed sārvadhātuka and ārdhadātuka follows'

sāsya devalī (4.2.24) 139 'a taddhita affix, namely aN, occurs as ruled after a syntactically related nominal stem, namely devalī 'divinity,' when the same ends in the nominative and the derivate denotes a divinity'

sici vṛddhiḥ parasmaiṇapadesaḥ (7.2.1) 63 'the final iK-vowel of an anṛga is replaced with its vṛddhi counterpart when sīc, followed by an affix termed parasmaiṇapada, follows'

siti ca (1.4.16) 222 'a form which occurs followed by an affix marked with S as an it is termed pada'

siddhasājakapakvabandhaś ca (2.1.41) 202 'a pada which ends in the locative (saptamāni) combines, optionally, in a tattprusā compound with a syntactically related pada which ends in a sūp and contains siddha 'established, made,' śuṣka 'dried,' pakva 'cooked, ripened' and bandha 'tied, bound'

sib bahulaṁ leś (3.1.34) 96 'affix sīp occurs, variously, after a verbal root when ITT follows'

sukhātibhiḥ kartūvedanāyām (3.1.18) 22 'affix KyaN occurs, optionally, after nominal stems
enumerated in the list headed by sukha 'pleasure, happiness,' provided the derivate denotes agent’s own experience'
sūtra anapunamasthāya (1.1.43) 111 ‘items denoted by the abbreviatory term sūtra (sū, au, jas, am, and au)’ are termed sarvanāmāsthamāna when they occur after a non-neuter nominal stem’
sūtra śāmanāhyacā (3.1.8) 56 ‘affix Kṣa occurs, optionally, to denote icchā after a pada which ends in a sūtra and denotes the object of one’s own wish’
sūtraśā (1.4.103) 134 ‘individual elements of each triad of sūtra are termed ekavacana ‘singular,’ dvivacana ‘dual’ and bahuvacana ‘plural,’ respectively’
sūprī ca (7.3.102) 113 ‘a long vowel comes in place of the final a of an aiṅga, also when a sūtra affix beginning with a sound denoted by the abbreviatory term yaṅ follows’
sūprī ṭhūtāśīra (2.4.71) 8 ‘a sūtra which occurs as part of a dhātu ‘verbal root,’ or of a prātiśāntika ‘nominal stem,’ goes through deletion via LUK’
sūprīvāntamśadā (1.4.14) 8 ‘that which ends in a sūtra and tīṅs is termed pada’
sūprī ajātā viniś tācchīrā (3.2.78) 29 ‘affix Nin occurs to denote tācchīra ‘one’s nature, or characteristic habit’ after verbal roots used in conjunction with a pada which ends in a sūtra and does not denote jaṅ ‘class’
sub śāmanīti parāṅgavāvāvavāvāvāvāvā (2.1.2) 114 ‘a pada which ends in a sūtra combines in a compound (samāsā) with a syntactically related pada ending in a sūtra’
suṣry ātic ca (3.4.87) 83 ‘a sī replacement of LOK is replaced with hi and is treated as though not marked with P’
suṣkha samyogavāy aste ca (8.2.29) 166 ‘the initial r and h of a conjunct which occurs at the end of a pada, which occurs followed by a sound denoted by the abbreviatory term jhāla, is deleted by LOPA’
sthānātadūṣṭhākṛteṣṭhā (2.1.39) 202 ‘a pada which ends in the ablative (paścāti) and contains kṛteṣṭhā ‘trouble, difficulty,’ or contains stems which denote sīkha ‘a bit,’ antika ‘near, proximate,’ or dhrū ‘far,’ optionally combines in a tapasvayama compound with a syntactically related pada which ends in a sūtra and contains Kā’
sthāyā pūpanvādhaśālabhāṛṣṭhābāhāṛṣṭhā pumāśābhāṛṣṭhā virāṣaḥ sīrṣaḥ apīraṇaśīpyādīṣvā (6.3.34) 209 ‘the form of a nominal which denotes feminine and shares an identical base for usage with a corresponding masculine, is, when not ending in affix anī, treated as that of its masculine, provided a nominal not ending in a pūraṇa suffix and not belonging to the list headed by sīrṣā follows in syntactic coordination with the signification of feminine’
sthāyā kīn (3.3.94) 41 ‘affix KsanP occurs after verbal root ṛśaR ‘to see’ when the root occurs in construction with a pada which denotes karman ‘object’ and the action is denoted in the past’
sthāyā (4.1.3) 62 ‘when the denotation is feminine’
sthāyā avanātikuntothūrūrya ca (4.1.174) 125 ‘a taddhīta affix termed tadrāja which occurs to denote a female offspring after syntactically related nominal stems avantī, kunī, and kuru is also deleted by LUK’
sthāh a ca (3.2.77) 30 ‘affix Ka, and KolP as well, occur after verbal root sthā ‘to stay, stand,’ used with or without any preverb,’ when the root occurs in construction with a pada which ends in a sūtra’
sthānāṅgaskalakārasāla (4.3.35) 184 ‘a taddhīta affix which occurs after syntactically related nominal stems śravīṣhā, pahgani, anurādhā, svāti, itiṣyā, pūnarvasu, haste, visākhā, asādī, and bahu, all ending in the locative, is replaced with LUK when derivatives denote ‘born there’
sthānīvad śādeo naunādau (1.1.56) 107 ‘a substitute is treated as if a substituendum except when an operation relative to an original sound (aI) is to be performed’
sthānī nātanamah (1.1.50) 36 ‘a substitute (ādeśa) which is to replace a substituendum (sthānī) should also be most similar to the substituendum’
spṛha hipita ca (1.4.36) 148 ‘a kāraka which serves as desired (ipīta) for the agent of an action denoted by spṛha ‘yearn after’ is termed sampradāna’
syātā śīrloṣā (3.1.33) 96 ‘affixes ya and tiṣṭ occurs, respectively, after verbal roots when LR and LUK follow’
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svaṁ rūpaṁ sabhasyaśabdasamjñā (1.1.68) 26 'a word, other than one which is a technical term of the grammar, denotes its form only'

svatantrāḥ kartā (1.1.54) 123 'a participant which serves independently of others is termed agent'

svaṁ ajñātādhanākhyāyām (1.1.35) 39 'the word sva is optionally termed sarvanāman when operations relative to ās are to be performed, and when sva 'one's own' does not express jñātā 'relative, clan' or wealth (dhana)'

svayam kṣena (2.1.25) 201 'svayam 'oneself,' optionally, combines in a tatpurṣa compound with a syntactically related pada which ends in a sUP and contains a nominal stem terminating in Kāṭa'

svaṁśādaprāparaṁ avayam (1.1.37) 122 'words listed in the set headed by soara 'sun, heaven' and those termed niṣūdha are classed as avayā'

svārāvānāḥ kartrabhīṣṭāya riyāphale (1.3.72) 37 'an aitamēpada affix occurs after a verbal root marked either with a svarita 'circumflex accent' or with Nī, provided the fruit of the action accrues to the agent'

svaṁśānādhihikārah (1.3.12) 70 'an adhihikā 'governing heading' is marked with svaria'

svāṅgac cetāḥ (6.3.40) 209 'the form of a nominal which ends in i and is used after a constituent denoting one's own limb in the feminine, sharing an identical base for usage in the masculine, is not treated as that of its masculine when a constituent other than mānin follows'

svāṅgac copasarjanāt (4.1.54) 20 'affix NīŚ occurs, optionally, to denote feminine after a nominal stem which contains an upasarjana used as its final constituent with the denotatum of svāṅga and which does not place a conjunct in its penultimate position (upadhi)'

svādībhyaḥ śnuḥ (3.1.73) 36 'affix Śnu occurs after verbal roots enumerated in the class headed by śuN 'to press out, squeeze' when a sārvadhihikā affix which denotes karī follows'

svādīṣu asarvanāmasthāne (1.1.17) 153 'a form is termed pada when svādi 'sU, etc. (affixes enumerated by rules 4.1.2 svaujasmauḥ... through 5.4.151 uraḥ prābhydrobhyaḥ kapat), with the exception of those termed sarvanā-masthāṇa (1.1.43 su dhana-prapakṣasasya) follow'

svāḍūṁ śānul (3.4.26) 186 'affix NamUL occurs after verbal root krN when it denotes a prior action, and shares the same agent with a subsequent action, provided krN also occurs and is used with an item which signifies svādu 'detectable'

svaujasmauḥcāṣṭābhyaḥśrīśeṣkhyāmbyāsäsakhyāsakhyāsakhyāsakhyāśrusūrya (4.1.2) 54 'affixes su/ au/ jas; am/ aṣ/T/ šas; Tī/ bhyām/ bhīs; Ne/ bhyām/ bhyas; nas/ bhyām/ bhyas/ nas/ os/ iṁ; Ni/ os/ suP occur after that which either ends in affixes marked with Nī, or āP, or is termed a nominal stem'

hānas ta ca (3.1.108) 47 'affix Kyap occurs to denote bhāva 'root-sense' after verbal root han 'to harm, kill, move' used with a preverb when a pada which ends in a sUP occurs in conjunction; additionally, co comes in place of the root-final n'

hanter jāh (6.4.36) 83 'an anśga, namely, verbal root han, is replaced by ja when affix hi follows'

halantya (3.3.3) 167 'the final consonant (haL) of a form in upadeśa is termed it'

halas tadetiśa (6.4.150) 176 'a penultimate y which occurs after a consonant, as part of a taddīhī affix relative to an anśga termed bha, is deleted by means of LOPA when ifollows'

halo namantarā samyogah (1.1.7) 121 'a sequence of consonants (hal), when not interrupted by any vowel (aC), is termed samyoga 'conjunct, cluster'

halīyābhyaḥ dīrghāṁ swātisāyākīnam hal (6.1.68) 101 'a sU, ti and si termed aṭṛkīnam, when occurring after an item ending in a consonant, or in a long ī or ā of the feminine affixes Nī and āP, is deleted by LOPA'

hujhvajor her dhīḥ (6.4.101) 82 'a consonant-initial hi which occurs after hu, or a form ending in a sound denoted by phaL, is replaced with dhī'

hṛkor anuvatārayām (1.4.53) 123 'a kāraka which serves as the agent of hṛN 'to carry' and DukṛN 'to do, make' when not used with NīC, is, optionally, termed karmāṇ when used with NīC'
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hetuhetumātaḥ liṅ (3.3.156) 185 ‘affix IIN occurs, optionally, after a verbal root when hetu ‘cause’

and hetumāt ‘casual action’ are denoted

hetau (2.3.23) 160 ‘a tṛīyā third triplet of st̐UP’ occurs after a nominal stem which denotes hetu
‘cause’

hrasvam laghu (1.4.10) ‘a short vowel is termed laghu’

hrasvanadyōpo nuṣ (7.1.54) 128 ‘augment nUT is introduced to affix ām when the same occurs

after an aṅga which ends in a short vowel, or ends in a form termed nadi, or else, ends in

a feminine affix marked with āP’

hrasvad aṅgū (8.2.27) 85 ‘the s which occurs after an aṅga terminating in a short vowel is

deleted by LOPA when a sound denoted by jhal follows’

hrasvo napuṣasakṛ prāṣāpadikasya (1.2.47) 87 ‘the final vowel of a neuter nominal stem is re-

placed with its short counterpart’
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