

A Glimpse into the *Apadam* - Constraint in the Tradition of Sanskrit Grammar

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Abstract. The tradition of Sanskrit Grammar has put a constraint: *apada.m na prayu~njiita* (non-inflected form should not be used in the sentence). The present paper is an attempt to examine the usefulness of this constraint in generating sentences. Paa.nini defines *pada* as an inflected form. Every lexical item is tagged as *dhaatu* or *praatipadika* in his system and subsequently affixed with the inflections and thus is furnished as a *pada*, fit to enter into a sentence. It seems that the *apadam*- constraint is an effective tool to eliminate the ill formed sequences from the well formed sentences thus contributing to the generative theory. The case filter principle of the modern universal case theory, with some difference, bears striking similarities with the present constraint. It reads: every overt NP must be assigned abstract case. However, although very effective, it is concerned with NPs alone. The *apadam*- constraint, although language specific, has a wider application being concerned with both NP and VP.

Key Words: *Apada*: non-inflected form, *pada* in the Paa.ninian model, the Case- Filter Principle, abstractness, universal application.

1 Introduction

The tradition of Sanskrit Grammar reads a constraint *apada.m na prayu~njiita* which means that non-inflected form should not to be used (in a sentence). Positively it means only inflected forms are to be employed in a sentence. Here the word *apada.m* is regarded as noun, alternatively it is possible to regard it as an adjective (*avidyamaana.m pada.m yasmin tad apadam*), meaning 'that which is devoid of the *pada*'. In this case it qualifies the substantive *vaakya*. Thus, the constraint can be interpreted in two ways, viz. (i) one should not use non-inflected form (in a sentence) (ii) one should not employ a sentence devoid of inflected form. The constraint no doubt brings out the notion that a sentence includes only inflected forms. Non-inflected forms cannot enter into a sentence. Thus it becomes essentially a syntactic constraint.

The present paper is an attempt to discuss its salient features, while showing its assumption in Paa.nini's model and comparing it with the contemporary theory. Working out models of Sanskrit generative grammar has particular importance for computational linguistics. Hence is the attempt of this presentation.

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2 Occurrences

The present constraint is handed over from generation to generation in the oral tradition of Sanskrit learning. Eminent scholars of Sanskrit Grammar trained in the traditional ways like (late) Pandit V.B. Bhagwat (Pune) and Dr. S.D. Joshi (Pune), who combine both traditional as well as modern idioms, to name a few, are proofs to this. The constraint has been quoted by Naage'sa in his *Paramalaghuma~njuu.saa* as a *bhaa.syavacana*.¹

However, the origin of present constraint is not traced in the *Mahaabhaa.sya* neither in any other written treatises. Nevertheless, it is possible to trace some quotations in the Sanskrit literature which implicitly refer to the present constraint e.g. Sure'svara in his *Nai.skarmyasiddhi* reads: *na samastyapada.m vaakya.m yat syaat j~naanavidhaayakam*.² Which means there cannot be a sentence which is devoid of *pada* and yet expressive of knowledge.

3 What is an *Apada*

To ascertain the exact import of the constraint and also to decide whether it is a semantic or syntactic one; it is essential, at the outset, to consider the term *apada*. In the plain sense it means non-*pada*. The term *pada* is variously defined in *Vyaakara.na*, *Nyaaya* and also in some Poetic treatises. In the tradition of *Nyaaya* it normally refers to a meaningful unit. *Anna.mbha.t.ta* in his *Tarkasa'ngraha* defines *pada* as "*sakta.m padam*",³ which means *pada* is a (linguistic) unit which is competent (of expression). Thus, the sequence of phonemes which does not convey any meaning is an *apada*. The position of *Nyaaya* is purely semantic. If viewed from the *Naiyyaayika*'s definition of the term *pada*, the constraint means: 'meaningless unit should not be used', becoming a purely semantic one.

Paa.nini defines *pada* as *supti'nanta.m padam*.⁴ (*pada* is a form which is suffixed with *sup* and *ti'n*). In his system *sup* is the term for nominal suffixes taught in the rule *saujasamau.t...* etc.⁵ and *ti'n* refers to the verbal endings taught in that of his *tiptasjhi...* etc.⁶ Thus *pada* is an inflected form either nominal or verbal. Consequently *apada* means a non-inflected form, i.e. a base or stem. The definition of

¹ Shastri, Pandit Sadashiva Sharma (ed.): *Paramalaghuma~njuu.saa*. Haridvar Sanskrit Series 43, pp.113, Benares (1935).

² Jacob, G.A. (ed.): *Nai.skarmyasiddhi*. BPS 38, pp. 14, Bombay (1985).

³ Athalye, Y. V. (ed.): *Tarkasa'ngraha*. BSS 50, pp. 50, Bombay (1930).

⁴ P.1.4.14. *Paa.nini* extends the term *pada* further in three aphorisms to refer to a special kind of nominal stem, which is to have specific morphophonemic changes. But this definition is not relevant for the present constraint.

⁵ P.4.1.2.

⁶ P.3.4.78.

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Paa.nini is a morphological one. The present constraint if viewed from the Paa.ninian definition of the term *pada*, becomes purely a grammatical one.

Thus the *apada*-constraint can be a semantic or syntactic one. As a semantic constraint it will be very basic and general in nature and will hardly require any explicit statement. It will not mark any linguistic peculiarity of Sanskrit. On the other hand, as a syntactic constraint it plays a particular role for Sanskrit syntax. It will mark the indispensability of inflections in the Sanskrit morphology. Hence I regard it to be a syntactic constraint.

4.1 The Present Constraint and Paa.nini

Paa.nini's A.s.taadyaayii (c. 500 BC.) basically deals with the derivative morphology. His way of describing the language is to take up the word and analyze it into the constituent parts. Paa.nini analyzes the noun *raajapuru.sa* as *raajan+as+puru.sa+as*; or the verb *bhavati* as *bhu+a+ti*. Thus he describes verbal and nominal morphology. Paa.nini's definition of *pada* is already referred to above. It will be appropriate at this point to see how he furnishes lexical items as *pada*-s. Hence I outline the process.

4.2 Verb

In the Paa.ninian system a verbal root is termed as *dhaatu*. His rule *bhuuvaadayo dhaatava.h*⁷ assigns the term *dhaatu* to the primary roots *bhuu-* etc. and his another rule *sanaadyantaa.h dhaatava.h*⁸ assigns the same to the secondary roots furnished with suffixes *-san* etc. This covers the following formations: 1) causal base ending in *-nic*, e.g. *bhaavay-* (<*bhuu-* 'to cause to be'); 2) desiderative base ending in *-san*, e.g. *a-bubhuus* (<*bhuu-* 'to desire to be');⁹ 3) frequentative base ending in *-ya'n* and *-ya'nluk*, e.g. *bobhuuya-* (<*bhuu-* 'to be intensively'); 4) and various denominative bases ending in *-kyac*, *-kaamyac*, *-kya'n*, *-kya.s*, etc.,¹⁰ respective examples: *putriiya-* ('to desire a son for oneself'), *putrakaamyaa-* ('to desire a son for oneself'), *apsaraaya-* ('to behave like a nymph'), *lohitaaya-* ('to become red'). Thus primary and secondary verbal bases are termed as *dhaatu*-s in the broader Paa.ninian sense.

⁷ P. 1.3.1.

⁸ P. 3.1.32.

⁹ P. 3.1.5.

¹⁰ P. 3.1.8 etc.

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4.3 Noun

In the system of Paa.nini a nominal base is termed as *praatipadika*. His rule *arthavadadhaaturapratyaya.h praatipadikam*¹¹ assigns this designation to a meaningful unit which is not a verbal base, not an affix, nor the one ending in affix e.g. *go* ('cow'), *a'sva* ('horse') etc. The next rule *k.rttaddhitasamaasaa's ca* extends the term further to apply to the primary derivatives ending in *k.rt* suffixes, secondary derivatives ending in *taddhita* suffixes and to compounds. Respective examples are as follows: *kart.r* ('maker') derived from *k.r-* with the suffix *-t.rc*;¹² *aa'svapata* ('descendant of *a'svapati*') derived from the nominal stem *a'svapati* with the suffix *a.n*¹³; *raajapurusa* (king's man) a *tatpuru.sa* of *raajan + puru.sa*.¹⁴

Thus as a first step in derivation, lexical items are termed as *dhaatu-s* and *praatipadika-s* in the Paa.ninian system.

4.4 Feminine Bases

Besides *dhaatu-s* and *praatipadika-s* a small class of left outs is that of feminine bases derived with suffixes *-ii* and *-aa*, they being appended with suffixes lose the designation of *praatipadika*. These feminine bases are referred to as simply "nyanta" (ending in *ii*) and *aabanta* (ending in *aa*) bases.

4.5 Base to Pada

As a next step all the three bases receive inflectional suffixes. Inflections are of two kinds, viz. *sup* and *ti'n*. They are technically termed as *vibhakti*.¹⁵ *sup-vibhakti-s* are the nominal suffixes *saujasamau.t...* etc. coming after *praatipadika-s* and feminine "nyanta, *aabanta* bases.¹⁶ *ti'n -vibhakti-s* are the verbal endings *tipasjhi...* etc. coming after the *dhaatu-s*. Thus as a second step every lexical item becomes finished with either *sup* or *ti'n- vibhakti-s* in the Paa.ninian system. At this stage they are termed as *pada-s* (inflected forms).¹⁷

4.6 Avyaya as Pada

Here it is important to note that even the so-called indeclinable of modern syntax is termed as *vibhaktiyanta pada* in Paa.nini. Words like *ucchaih* ('high'), *niicai.h*

¹¹ P. 1.2.45.

¹² P. 3.1.133.

¹³ P. 4.1.84.

¹⁴ P. 2.2.8.

¹⁵ P. 1.4.104.

¹⁶ "nyaappraatipatikaat", P. 4.1.1.

¹⁷ *supti'nanta.m padam*, P. 1.4.14.

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(‘low’) which are classed as indeclinables according to the modern syntax are looked upon as *praatipadika*-s as a first step in the Paa.ninian system.¹⁸ They are appended with the nominative case suffix to convey the mere nominal stem meaning.¹⁹ This nominative case is subsequently zeroed by *luk* elision according to P.2.4.82. Thus in the Paa.ninian system the words *ucchaih* (‘high’), *niicai.h* (‘low’) etc. become covertly marked for the nominative *sup-vibhakti*. By his rule *pratyayalope pratyayalak.sa.nam* they are treated as *vibhaktyanta*-s and hence receive the status of a *pada*. The so-called indeclinable of modern syntax is technically termed as *avyaya* by Paa.nini.

Here it is essential to mention that Paa.nini does not indulge himself in giving functional definition of *avyaya* (like *yan na vyeti tad avyayam* etc.). Instead, Paa.nini has given an enumerative definition of *avyaya*.²⁰ His five rules beginning with *svaraadinipaataam avyayam* P. 1.1.37 enumerate the words which will have the designation of *avyaya*. They include *nipaata*-s (particles) like *ca* (‘and’), *upasarga*-s (prepositions) like *pra*, case adverbs like *tatra* (‘there’), infinitives like *kartum* (‘to do’), gerunds like *krtvaa* (‘having done’), and adverbial compounds like *adhihari* (‘on the Lord Hari’). Paa.nini recognizes them as subclasses of the broadest *avyaya*-class.

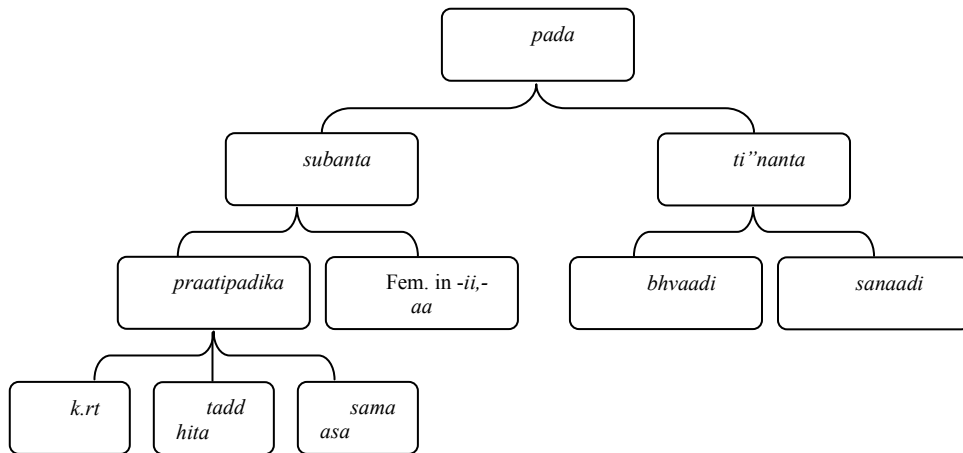


Fig. 1. Every base being developed as pada in Paa.nini’s model.

¹⁸ P.1.2.45.

¹⁹ P.2.3.46 includes the expression *praatipadikaartha*, the point in this kind of process is that the words like *ucchaih* (‘high’), *niicai.h* (‘low’) which do not possess a gender or number of their own, neither being fit to be marked for any specific case meaning, are appended nominative in the mere sense of *praatipadika*, and assume the status of a *pada*.

²⁰ His definition of *sarvanaama* is also of enumerative kind and not a functional one, cf. P. 1.1.27.

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4.7 Pada as a Single Class

The fact that Paa.nini regards *avyaya-s* to be covertly marked for *vibhakti* is suggestive of his attempt to squeeze all the parts of speech into a single category of *pada*. This *pada* is only twofold *ti''nanta* (finite verb) and *subanta* (inflected noun). *ti''nanta-s* include *bhvaadi ti''nanta* (primary) and *sanaadi ti''nanta* (secondary). *subanta-s* include *praatipadika-subanta*, *k.rt-subanta* (primary derivatives), *taddhita-subanta* (secondary derivatives), *samaasa-subanta* (compounds) and *''nyanta-, aabanta-subanta* (feminine derivatives).

Every word, according to Paa.nini, has to have a *pada* status. His model is designed in such a way that out of it every base must be derived as *pada*. It seems that Paa.nini himself must have presupposed the principle *apada.m na prayu-njiita* or some commentator on Paa.nini has postulated it in order to teach the morphological process of Paa.nini. Be it as it is, the constraint *apada.m na prayu-njiita* underlines the technique of word derivation used by Paa.nini in his A.s.taadhyayii.

5 The Constraint and Sanskrit Language

The constraint *apada.m na prayu-njiita* reflects upon the nature of Sanskrit which is highly inflectional; e.g. in a Sanskrit sentence: *Devadatta.h ka.tam karoti* ('Devadatta makes a mat'); *Devadatta.h* is a *pada* being finished with the case inflection *-su*. This single suffix stands for two units of meaning, viz. agent and singular, i.e. it marks two categories of case and number. Similarly *karoti* is the *pada* finished with the verbal inflection *-tip*, which marks the agent, number, tense and voice simultaneously. Thus in Sanskrit, the *vibhakti* (inflectional part) is always more expressive. Besides marking the syntactic categories, the *vibhakti-s*, especially the *sup-vibhakti-s*, carry another important function of revealing the *kaaraka-roles* (if it is not expressed by a *ti''n* suffix) and other structural relations.

Kaaraka-Roles Exemplified. *kaaraka-s* are the specific syntactic –semantic relations that the NPs have with the predicate VP. Tradition of Sanskrit grammar specifies six *kaaraka-roles*. They are *kart.r*, ('agent of the action') *karman* ('object or goal of the action'), *kara.na* ('instrument of the action'), *sampradaana* ('beneficiary of the action'), *apaadaana* ('point of separation of the action'), and *adhikara.na* ('substratum of the action'). For instance in the sentence *Devadatta.h ka.tam karoti* ('Devadatta makes a mat'), the NP *Devadatta.h* is related with the verb *karoti* by being an *abhihita kart.r* ('expressed agent') of the activity, the NP *ka.tam* is related with the verb *karoti* by being a *karman* (object) to be obtained by the action. Thus the NPs *Devadatta* and *ka.ta* play the *kaaraka-roles* of *kart.r* and *karman* respectively.

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These roles are to be revealed in a sentence. *sup-* suffix is the device to reveal them. The twenty –one *sup*-suffixes are divided in triplets and respectively termed as *prathamaa*, *dvitiiyaa*, *t.rtiyaa*, *caturthii*, *pa~ncamii*, *.sa.s.thii*, and *saptamii*. Each triplet stands for some specific *kaaraka* – relation. Thus:

dvitiiyaa denotes *karman*

t.rtiyaa denotes *kara.na*,

caturthii denotes *sampradaana*,

pa~ncamii denotes *apaadaana* and

.sa.s.thii denotes either *kart.r* or *karman*, P.2.3.65,

saptamii denotes *adhikara.na*.

As a first step noun is assigned a *kaaraka*-term. Then to reveal that role appropriate *vibhakti* is added. Thus the assignment of *vibhakti* is determined by the *kaaraka*-role. Hence it is known as *kaaraka-vibhakti* in the tradition.

Other Relations Exemplified. The tradition of grammar recognizes another type of *vibhakti* assignment, the *upapada-vibhakti*, wherein a certain word assigns *vibhakti* to the noun, which is structurally related to it, e.g. *antaraa tvaa.m maa.m ca kama.n.dalu.h* ('the bowl is between thee and me'). Here the preposition *antaraa* ('between') governs the *dvitiiyaa* of the NPs structurally related to it. In the *upapada-vibhakti* there is a structural expectancy. Government is the only principle there. Similarly the *.sa.s.thii vibhakti* also stands for relations like possessor and possessed, whole and part etc; e.g. *raaj~na.h puru.sa.h* ('king's man'). In this way we have two types of *vibhakti* -assignment in Sanskrit, viz. *kaaraka* and *akaaraka* (including *.sa.s.thii* and *upapada*). The former reveals the *kaaraka*-roles while the latter reveals structural relations like noun-noun relations among constituents.²¹

6 The Present Constraint and Structure

The very nucleus notion of a structure is that its constituents are related to each other. Sentence is a structure made up of words and phrases that are related to each other. Without their mutual relations it will otherwise be a string of words – would not make a sentence. It cannot convey any sense either. It is seen here that *vibhakti* is helpful to reveal this syntactic relation and also to mark various categories of case, number, tense and voice. This notion was realized in the early tradition of Sanskrit grammar. The *apadam*-constraint is the systematic outcome of this realization.

²¹ It is possible to regard the *sup- vibhakti* as fourfold, viz. *kaaraka*, *upapada*, "*se.sa*, and *praatipadikaartha*.

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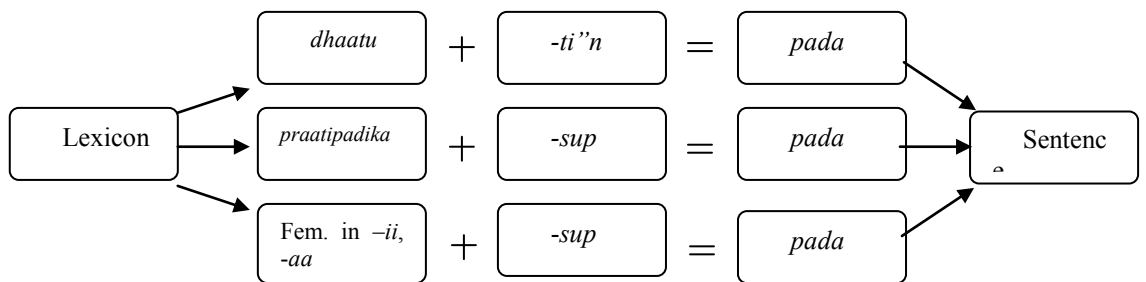
7 Vedic Language

It is a well known fact that the earlier Vedic language (c.1500 BC -800 BC) is much more archaic in nature and many of its features are difficult to account for through the Paa.ninian system. In that language very often some forms are available without case terminations, e.g. the locative singular *vy'oman* (instead of *vy'omni* or *vy'omani*), *a'sman* (instead of *a'smani*).²² This type of expression is more frequent in the .Rgveda. Naturally the constraint is not obeyed here. Paa.nini regards the *luk-*elision of nominal suffixes in case of such Vedic forms.²³ Thus they are also looked upon as *pada-s* in the Paa.ninian system.

In the case of modern poetry also it is possible that the constraint is ignored especially in the case of many foreign words. The present constraint applies much more to the grammatically regular or a standard language.

8 Generative Aspect of the Present Constraint

It seems that the *apadam* -constraint together with the application of Paa.nini's derivative rules can be an effective tool to eliminate the ill-formed sequences from the well-formed sentences thus contributing to the generative theory. In Paa.nini every lexical item will be tagged and then accordingly affixed either of the two *vibhakti-s* and thus will be furnished as a *pada*, fit to enter into a sentence. The constraint will work here. For example it will reject the sequence *Devadatta ka.ta k.r* ('Devadatta mat make') as not being a sentence since it contains all *apada-s* (bases). While it accepts *Devadatta.h ka.ta.m karoti* ('Devadatta makes a mat') as a well formed sentence since it contains all the *pada-s* (i.e. inflected forms). It is in the following way.



²² Macdonell, A.A.: Vedic Grammar. Para.325, Karl J. Trunbar, Strassburg (1910).

²³ P. 7.1.39.

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Fig. 2. Lexicon to sentence

9 The *Apadam* –Constraint and the Modern Universal Theory

I now take up a constraint postulated in the modern linguistic theory. It will be interesting to see common speculations between the ancient Indian theory and the contemporary one.

The case filter principle of the modern universal theory, with some differences, bears striking similarities with the present constraint. The case filter principle reads: “Every overt NP must be assigned abstract case”.²⁴ In plain words it means that in a sentence the NP must be marked with some case that is assigned to it, we cannot employ any non-case assigned NP in the sentence. This principle is called as filter because it filters out the sequences wherein the NP is employed without any case assigned to it.

Theta Role. Yet another important principle related with the universal case theory is that of theta role. It demands our attention while dealing with the case filter condition. The universal theory claims that every predicate has argument structure, it is specified for a number of arguments it requires; e.g. in English sentence ‘John killed Bill’, *kill* is the predicate, it requires at least two arguments. The NPs *John* and *Bill* are its arguments so it is a two way predicate. The arguments are the participants minimally involved in the activity or state expressed by the predicates. Thus they are related with the VP. These relations are looked upon as theta roles. Liliane Haegemen enumerates nine theta roles as agent, patient etc.²⁵ In the above quoted example *John* has the theta role as agent and *Bill* as that of patient. The theta criterion of the universal theory says that every argument must be assigned a theta role. Case is the device to mark the theta role of the NP. Hence the case is indispensable. Here Liliane Haegemen tries to explain the indispensability of a case in a fine metaphor of the play. He says:

“The argument NPs must be made visible by means of case in the way that the characters playing a part in a performance must be made recognizable by their outward appearance. If all actors looked identical we would not be able to

²⁴ Haegemen, Liliane: Introduction to Government and Binding Theory. pp. 167, Blackwell Publisher Ltd, Oxford (1991).

²⁵ Ibid. pp. 49.

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tell who is playing which part. NPs are licensed by virtue of their case properties”.²⁶

Here the case assignment is via theta role and it is called as inherent case assignment. It is distinct from the structural case-assignment wherein an NP governs the case of another NP which is structurally related to it. It is blind to any theta role, e.g. in English the preposition *towards* governs accusative, as in the sentence: *John went towards him*. This kind of case assignment is referred to as a structural case assignment.

Thus in the modern linguistics the case is viewed to be either inherent or structural. It is considered as important to mark the theta role and also the structural relations. Hence is the necessity of case filter condition.

10 Comparing the Traditional and Modern Approaches

Certain points of similarities between the *apadam* –constraint of traditional Sanskrit grammarians and the case filter principle of the universal theory have clearly emerged from what has preceded. They hardly require any mention. However the major area where they differ is the notion of abstractness. The case filter condition requires an NP to be assigned an abstract case. It operates on abstract level. Case is taken to be an abstract property; its morphological realization can vary from language to language. In an inflectionally rich language like Sanskrit there will be a full-fledged morphological realization of the case. In an analytic language like English it will be less. Thus the abstraction makes the case filter principle applicable universally. On the other hand, the traditional *apdam* –constraint refers to the *sup* and *ti”n* the concrete endings. Hence it becomes specific to Sanskrit, and there is hardly any scope to apply it to other languages in the literal sense. The case filter principle takes into consideration the NPs. It has nothing to say about VPs. Hence it cannot account for the total grammaticality of the sentence. The *apadam*-constraint applies to both NPs and VPs. Strictly speaking all the modern parts of speech are included in these two. Thus *apadam*-constraint becomes a complete principle to check the grammaticality of a sentence.

11 Conclusions

apada.m na prayu~njiita is a syntactic constraint handed over by the oral tradition of ancient Indian grammarians. It is based on the Paa.ninian notion of *pada*. The constraint is useful to check the grammaticality of a sentence. Actually this is the area where the interests of contemporary linguistics and ancient Indian grammar intersect

²⁶ Ibid. pp.189.

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each other. The case filter principle of the modern universal theory runs on almost similar lines. However, although very effective, it is concerned with NPs alone. The *apadam*-constraint, although language specific, has a wider application being concerned with both NPs and VPs.²⁷ We can bring out a common product, obtaining best of the both worlds, which would surely lead to some positive developments not merely theoretical but practical also.

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²⁷ They include all the modern parts of speech.