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### The structure and semantics in pāṇinian system of grammar

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#### Introduction

अनादिनिध्नं ब्रह्म शब्दतत्त्वं यदक्षरम् ।  
विवर्ततेऽर्थाभावेन प्रक्रिया जगतो यतः ॥ <sup>1</sup>

All the Indian grammarians consider the sentence to be the ultimate meaningful grammatical unit <sup>2</sup>. Pāṇini himself, though describes the components of a sentence in the form of padas and the syntactic relationships representing the 'rūpatattva' and the 'arthatattva' respectively and further analyses padas by breaking these into bases and affixes to show the addition of the morphemes and semantemes, but remains a strong supporter of the theory of 'indivisible sentence'—a 'vākyaavādin' <sup>3</sup>. Pāṇini does not believe in the autonomous status of the minute divisions of a sentence i.e. base, affixes, etc. According to him, the combination of both base and affix – is fit to be used- सुप्तिघन्तं पदम् । <sup>4</sup> It shows that Pāṇini as well as Bhartṛhari accepts it as 'apoddhāra' <sup>5</sup>—an imaginary process of derivation, which exists only in theory <sup>6</sup> - 'कथं तर्हिमे शब्दाः प्रतिपत्तव्याः किञ्चित् सामान्यविशेषवल्लक्षणं प्रवरित्यं येनाल्पेन यत्नेन महतो महतः शब्दौगान प्रतिपदयेरन् सामान्येनोत्सर्गः कर्त्तव्यः तस्य विशेषेणापवादः' । <sup>7</sup>

Pāṇinian grammar is restricted to study of the outer form of the language and derivation of its words being used in the loka (as people are the supreme most authority regarding the fitness of the words) <sup>8</sup> irrespective of their being meaningful. Though he does not state any purpose of his grammar but it can be concluded that he wants to secure the best form of the Sanskrit language as the standard form of the language. His means, to prove each word composite, are the combinations of a base and affixes. For that purpose, he needs only the outer-surface structure of the words. Sometimes, he also preaches some senses to control the usage but only where the senses have some impact on the structure <sup>9</sup>. Besides Pāṇinian concept of zero suffixes also prove his being a stern follower of structuralism <sup>10</sup>.

The structure has been an important basis for all studies related to the grammatical categories, be it—morphological, syntactical or lexicographical; or historical, comparative or analytical. In a study from structural point of view, a grammatical category is studied thoroughly and intensively to understand its internal structure. It is further analyzed on the various deeper levels e.g. its place in a sentence, phrase, base, affixes etc and then its characteristics, divisions, process etc., the derivation and inflexion processes are discussed, the changes in the form of derivative, due to time and other factors are noted down. Thus, the significance of that grammatical category is decided.

This mode of analysis, based upon the structure of the words, dates back to Vedic era, where there is so much diversity visible in the forms of the roots. The language of the Vedas is highly developed and the prosperity of its vocabulary and absence of a proper grammar of Vedic language make it difficult to understand its contents completely unless these are examined at the level of pada, in the form of base and affixes to understand the morphemes and semantemes separately and individually – शतत्रा प्रतिवाक्यं संकेतग्रहणासम्भवात् तदन्वाख्यानस्य लघुपायेन अशक्यत्वाच्च कल्पनया पदानि प्रविभज्य पदे प्रकृतिप्रत्ययविभागकल्पनेन कल्पिताभ्यां अन्वयव्यतिरेकाभ्यां तद् तदर्थविभागं शास्त्रामात्राविषयं परिकल्पयन्ति स्माचार्याः । <sup>11</sup>.

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The Gopatha Brāhmaṇa presents the first ever proof of the in-depth knowledge of the Vedic people of the language grammar and its structural and semantic divisions—“ओकार पृच्छामः, को धतु, किं प्रातिपदिकं, किं नामाख्यातं, किं लिंगं, किं वचनं, का विभक्तिः, कः प्रत्ययः, कः स्वरः उपसर्गो, निपातः, किं वै व्याकरणं, को विकारः, को विकारी, कतिमात्रां, कतिवर्णं कत्यक्षरः, कतिपदः, कः संयोगः, किं स्थानं नादानुप्रदानं करणम् ।”<sup>12</sup>

Since very ancient times, the Indians have been aware of the changes that take place in a language and keep it changing. Efforts to determine the etymologies and the meanings of the Vedic words had been launched even before Yāska<sup>13</sup>. The Prātiśākhya had noted down the changes in pronunciation of the words and had brought to attention the changes in form. The Prātiśākhya and the Nirukta consider the structure of a 'pada' to be the first basis of Nirvacana though the prominent mode of analysis remains the semantics 'अर्थः नित्यं परीक्षेत्'<sup>14</sup>. Pāṇini was the first ever grammarian to compose a comprehensive grammar for the whole Sanskrit language on the base of its ākṛti (structure)<sup>15</sup>. Pāṇini had not coined all the technical terms himself but had adopted these from his predecessors—tradition<sup>16</sup>. It shows the importance of structure based grammatical studies before him. Pāṇini describes almost all the technical terms as the denotation of the signified words i.e. सम्झी<sup>17</sup> शब्दसंज्ञायां शब्दस्यैव सम्प्रत्ययो भवति नार्थस्य ।<sup>18</sup> Pāṇini uses these terms and definitions 'to point out or distinguish certain things from the rest'<sup>19</sup> by grouping similar things on the structural basis. Pāṇini's suffixes require structural conditions, e.g. vowel final bases or consonant final bases to add with. His grammatical operations, depicting the changes in accent, formation, vowels, etc., his definitions like ṭi, ghu, naḍī, praṅgha, niṣṭha, sat, etc. depend heavily, or to say, totally on the structural aspects of their bases.<sup>20</sup> The following aphorisms are a few of hundreds of the examples from Aṣṭādhyāyī which exhibit the importance Pāṇini gives to the structure - सरूपाणामेकविभक्तौ<sup>21</sup> ऋ अर्थवदधतुरप्रत्ययः प्रातिपदिकम्<sup>22</sup> ऋ सुप्तिघन्तं पदम्<sup>23</sup> परं श्च ।<sup>24</sup> Even the definition of the Kṛt Suffixes— 'कृदतिघ्'<sup>25</sup> depends upon the surface structure of 'Tiṅ' and Kṛt suffixes. Similarly their application depends upon their being structurally similar or dissimilar - वास्रूपास्त्रिायाम्<sup>26</sup> A As all the grammars after Aṣṭādhyāyī follow it fully or partially, their mode of instruction and derivation of words remain strictly Pāṇinian - the structural one.

The development of Sanskrit language led to the evolution of many other languages like prākṛt. The composers of Prakṛt grammars had essentially used the technique of postulating a common form where they treated Sanskrit forms as prākṛti 'the original' and prākṛt forms as vikṛti the derivatives of the Sanskrit forms. Thus structure played an important role in the derivation of the Sanskrit language as well as of the daughter languages of the Sanskrit language.

चत्वारि शृङ्गा त्रायो अस्य पादा, द्वे शीर्षे सप्तहस्तासो अस्य ।

त्रिधा बभौ वृषभो रोरवीति, महो देवो मर्त्या आविवेश ।<sup>27</sup>

This Ṛgvedic hymn depicts the God in the form of the great 'bull' which symbolizes the eternal 'Śabda'—nāda ; the nāma, ākhyāta, upasarga and nipāta are considered to be its four horns: his three feet are the three time divisions namely, past, present and future ; has two heads, namely the nitya and the kārya, i.e. the meaning and its denoter word respectively. This God resides chained at three places - Uras (heart or lungs),<sup>28</sup> Kaṅṭha (larynx) and Śiras (brain)<sup>29</sup> and creates words<sup>30</sup>. This

hymn is a clear evidence of the semantics being an integral part of the study of language since Vedic era. Beside this, there are many other evidences to prove that Vedas give more importance to the meaning of the words than the word itself, मण्डप 'सर्वस्यै वाच ईशाना चारु मामिह वदयेदिति वाग्-रसः'<sup>31</sup> declares the meaning to be the 'rasa - essence of Vāṇī i.e. language. वाग्वै मनसो ह्रसीयसी<sup>32</sup> says that the linguistic aspect (Vāktattva) is less significant than the thought (manastattva) i.e. the word is less important than its meaning. The Gopatha Brāhmaṇa which for the first time, attests the various grammatical categories, also gives more importance to the meaning than structure of a word— 'रूपसामान्यादर्थसामान्यं नेदीयं'<sup>33</sup> Yāska also considers the meaning to be the prominent basis for defining words or nirvacana— 'अर्थः नित्यं परीक्षेत्'<sup>34</sup>

Whether Pāṇini acknowledges the significance of semantics in derivation of words and formation of a sentence, is a question that requires a great discussion. Pāṇini's Aṣṭādhyāyī depends heavily upon the outer structure of the language (which, according to Noam Chomsky, is the initial stage - the surface structure. With the addition of post lexical structure, it leads to the syntactic structure - the deeper structure which is 'mapped into semantic representation by semantic rules.)<sup>35</sup> He considers sentence to be the ultimate meaningful unit- and does not specify any elaborate deep or semantic structure. He restricts the analysis to the surface structure only. It makes scholars believe that "meaning has been treated by grammarians as falling outside the derivational competence of grammar."<sup>36</sup> Some other ones find semantics to be the initial stage of the derivations generally<sup>37</sup>. According to Cardona, "Meaning serve as conditions for the introduction of suffixes and Pāṇini's kāraṅka classification rules serve to bridge the gap between semantic relations and grammatical expressions"<sup>38</sup>. "On the basis of significance given by Pāṇini to semantics, one can compare the system of derivation in Pāṇini and Yāska on the same basis"<sup>39</sup>.

In fact Pāṇini did not neglect meaning but he was aware of the fact that meaning was likely to change over time and the final authorities regarding meaning are the people who speak the language.

Most of the Pāṇinian definitions and his derivational procedure are based upon the structural as well as semantic aspects of the Sanskrit language, as clear from & प्रधानप्रत्ययार्थवचनमर्थस्यान्यप्रमाणत्वात्<sup>40</sup> & He does not mean to keep semantics out of the field of derivation, as believed by some. On the contrary, Pāṇini tries to categorize the uses of words from the semantic point of view, e.g. classification of roots into gatyarthaka, budhyarthaka etc. He preaches affixes as meaningful units and introduces them under specific semantic conditions. By the aphorisms like 'उणादयो बहुलम्'<sup>41</sup> and 'कृत्यल्युटो बहुलम्'<sup>42</sup> Pāṇini has indicated that his grammar can not fully justify in listing all the senses of affixes<sup>43</sup>. He acknowledges the congregation of various morphological, syntactical and lexical senses with in the surface structure based derivational procedures. It makes scholars like Kiparsky and Stall consider four levels in Pāṇinian derivational scheme<sup>44</sup>—

Level 1 - Semantics

Level 2 - Abstract Syntax (Kāraṅkas)

Level 3 - Surface Structure (Morphology)

Level 4 - Phonetics

Even though Pāṇini puts forward various types of senses through his grammatical rules but still he does not accept the level wise division of his derivational scheme (as proposed by

Kiparsky and Stall), nor he specifies an elaborate semantics or deep structure<sup>45</sup>. In the words of Prof. Anil C. Sinha, Pāṇini "does not accept the dichotomy of structure and deep surface. He does not posit a general semantic structure."<sup>46</sup>

Pāṇini uses the formal, syntactic or syntactico-semantic conditions to govern the bases, affixes or both. One can interpret agent and object as syntactic or syntactic – semantic conditions and bhāva as a semantic condition. Besides these, there are many other semantic conditions like, the signification of instrument, etc. which governs the derivation procedure<sup>47</sup>.

While Pāṇini uses semantics as secondary condition for the development of structure, Kātyāyana records the change in form and senses by providing new forms, or senses as supplements<sup>48</sup>. Patañjali interprets Pāṇini's structural theories from the semantic and philosophical points of view. According to Patañjali & अर्थगत्यर्थः शब्दप्रयोगः & the language is originated for the sole purpose of expression of the meaning and also, यदधेतमविज्ञातं निगदेनैव शब्दयते। अनन्नाविव शुक्लधे न तज्ज्वलति कहिचित्।।<sup>49</sup>

As per Patañjali, word expresses the intended vācya senses which in turn reveal the intended senses or objects. Congregation and unity of senses of various grammatical categories is what Patañjali calls 'Vākya'. According to Patañjali, when individual words carrying individual senses merge into each other, lose their identity to represent the whole, it is known as समर्थः पदविधिः। It shows that Patañjali accepts the various grammatical categories as meaningful elements which express their senses as a whole. He believes in Pāṇini's method of derivation but 'strongly emphasizes the semantic base underlying the surficial - structural derivational procedure.

Patañjali defines 'Semantics' as 'सर्वे भावाः स्वेन भावेन भवन्ति स तेषां भावः'<sup>50</sup>—the sense, for whose revelation or expression a word has been used, is known as its meaning. Similarly, Bhartṛhari defines it as 'the sense expressed by a word when uttered - व्यस्मिन्स्तु चरिते शब्दे यदा योर्थः प्रतीयते। तमाहुरर्थं शब्दस्य नान्यदर्थस्य लक्षणम्।।<sup>51</sup>

Nāgeśa accepts Pāṇinian structural procedure, based upon base and affixes, as a grammatical exercise and the sense thus derived to be theoretical (Sāstrīya) only in nature- 'कृतवर्णानुपूर्वीकं पदमिति। अनेन(र्थबोधनसामर्थ्यं विशिष्ट पदे एव न तु सत्यपि शास्त्रात्प्रकृतिप्रत्यय शक्तिज्ञाने तस्य लोके बोधकत्वमिति।<sup>52</sup> Jayant in Nāyamañjarī says - योर्थः प्रतीयते यस्मात् स तस्यार्थः इति स्मृतिः - the sense denoted by the word is the meaning of that word.<sup>53</sup>

As per the western thinking, 'Semantics is the study of vocabulary and meaning'<sup>54</sup>. While Ullmann defines it as 'the science of meaning'<sup>55</sup>, Ogden and Richards have suggested sixteen possible meanings of 'meaning', e.g. it is 'the connotation of a word; 'the theoretical consequences of a statement' and 'that which a sign is interpreted as being of, etc.<sup>56</sup>. Of these, the best meaning of meaning is—'Meaning of a symbol is what the hearer believes the speaker to be referring to'<sup>57</sup>."

Though Indian tradition does not give any specific inclusive name for the study of meaning, but it appears in almost all the systems of philosophy, logic, poetics and grammar as an integral part of that system, as clear from the following instances. 'शब्दार्थौ सहितौ काव्यम्'<sup>58</sup> ऋ 'इष्टार्थव्यवच्छिन्ना पदावली काव्यम्'<sup>59</sup> ऋ 'वागर्थविव सम्पृक्तौ वागर्थप्रतिपत्तये। जगतः पितरो वन्दे पार्वतीपरमेश्वरौ।।<sup>60</sup>

The Sanskrit 'Poetics' contains great discussions regarding the word and its meaning, conditions governing meaning, the

means of expressing meaning, etc. It is mainly devoted to the linguistic forms and considers semantics to be an extension of Poetics. It uses semantics explicitly and implicitly as the base for the linguistic study e.g. the division of figures of speech depends upon the division of form and meaning, etc.

All the streams of philosophers consider the expression of meaning as their prime objective though their means may vary. The logicians define the word as the linguistic symbol for any indicator of meaning—the denoter of the senses. They consider both grammatical and lexical senses, denoted by the word, to be the meaning of the word and a sentence, satisfying ākāmṅsā, yogyatā and sannidhi, to be the ultimate meaningful unit and an indicator of the object world. The Mimāṃsā is devoted to the task of interpreting Vedas. It is primarily concerned with the problem of meaning and interpretation. According to it, the senses intended by the speaker and conveyed through the sentence—'bhāvanā' to be the meaning of the sentence. The Grammar Philosophy is devoted to the study of senses denoted by the sentence and the process of expression of senses as the 'Sphoṭa' - 'स्पष्टित् अर्थो यस्मादिति स्पष्टोः' The grammarians believe in the indivisibility of the sentence and consider all the divisions of sentences i.e. bases, affixes etc. to be theoretical exercises – 'apoddhāra' only. According to Bhartṛhari.— 'अनादिनिध्नं ब्रह्म शब्दतत्त्वं यदक्षरं। विवर्तते(र्थभावेन प्रक्रिया जगतो यतः।।'<sup>61</sup> He considers word and meaning to be interrelated and the two inseparable parts of the same thing- 'एकस्यैवात्मनो भेदो शब्दार्थावपृथक्स्थितौ।'<sup>62</sup> Hence, semantics is the common link between all the systems of knowledge and all the systems - the 'lakṣaṇas' work for the achievement of the meaning – the 'lakṣya'.

The meaning, though is intimately attached with its denoter word, does not remain static and the same always. Language undergoes changes with time and with the development of language, the senses of words also develop. Many a thinkers interested in language and meaning tried to classify and characterize various changes in meaning and tried to explain their causes as well as extent. This trend has started in the Vedic times itself as Vedas exhibit ample examples of development of form and change of senses. Yāska again emerges as the pioneer in this field of semantics as he is the first to confirm the diversity and development of the senses in a language 'उच्चवचैरभिप्रायैमंत्रादृष्टयो भवन्ति' & He accepts various senses like benediction, praise, determination, curse, curiosity, etc. to indicate the variety of bhāva or diversity of senses. He acknowledges the various directions of transformation of meaning e.g. arthātis'aya, arthavikāsa, arthabheda, padārtha, vākyaārtha, nāmārtha, ākhyātārtha, arthabodha, etc. According to him, no word can be formed without this 'change in meaning'<sup>63</sup> Patañjali also has referred to the same tendency of the senses to change- 'एकश्च शब्दो ब"वर्थाः'<sup>64</sup>

Even the language recorded by Pāṇini underwent changes which were added to his grammar by his successors like Kātyāyana and Patañjali. Under the semantic aspect of a grammatical category, its senses are judged, the various directions of the changes in the semantics, e.g. expansion, contraction and transference of semantics<sup>65</sup> are noticed along with their causes; the devices to record them and the relation of meaning with the word, etc. are discussed. In the words of Louis H. Gray, "Semantics deals with the evolution of meanings of words and with the reasons for their survival, decay, disappearance and sometimes, revival as well as the cause of creation of new words."<sup>66</sup>

‘वागर्थाविव सम्भूक्तौ वागर्थप्रतिपत्तये ।  
जगतः पितरौ वन्दे पार्वतीपरमेश्वरौ ।’<sup>67</sup>

A word is consisted up of two interdependent aspects - structure and meaning. Word or speech remains useless unless they are understood through their meaning, which is inseparably one with them<sup>68</sup>. The view, that the Indian systems of knowledge do not accept semantics important, is completely wrong. Actually semantics is an essential part of the linguistic studies and shares space within all of them. The absence or lack of semantic notions in grammatical themes and theories can be justified in the words of Prof. Aklujkar that, "...it (the Indian tradition) did consider, from very ancient times, the study of linguistic forms and the study of meaning as two distinctive branches of linguistic knowledge, – intimately connected with each other but too important and too extensive not to have recognition as mutually distinct bodies of knowledge<sup>69</sup>.

Though, usually grammar is considered to be useful for the study of structure of words only and it is believed that categorization of grammatical elements, their definitions etc. – all grammatical functions are based upon the structure of the word and are not determined by their semantics. But actually semantics is the soul of the language. It plays a significant role in grammatical studies and categorizations. The grammatical categories though based upon structure, express symmetry of meaning as well.

To understand this symmetry of meaning one must know the various types of meanings denoted by a word. A word when articulated indicates the denotative, etymological and syntactic senses. These develop under semantic rules to give out the lexical senses<sup>70</sup> which, in turn, indicate the speaker's intention etc<sup>71</sup>. (preached by Bhartṛhari as twelve possible meanings)<sup>72</sup>. The meaning extracted from structural bases is different from the deeper meaning of the words. The symmetry of meaning here does not specify the similarity of the signified object but the symmetry of the method of indication in which the word is employed in<sup>73</sup>. The deeper meaning of words can not be contained in the categories based upon the structure of the words<sup>74</sup>.

While all the grammarians acknowledge the presence and utility of the grammatical senses in the structural procedures, they consider the lexical meaning to be the subject matter of a distinct body of knowledge. This led to the formation of the grammarian's attitude when they consider structure (study of form) and semantics – study of meaning as two separate bodies of linguistic knowledge though they accept that theoretically form and meaning are not absolutely separable. It becomes clearer by considering the two streams of Sanskrit grammatical studies.

While Pāṇini and Pāṇinian grammarians and their works like Aṣṭādhyāyī, Mahābhāṣya, Kāśikā, Siddhānta Kaumudī., Śabdenduśekhara, etc. preach the word from the structural point of view, other grammarian philosophers and work like Vākyapadīya, Vaiyākaraṇa Bhūṣaṇa Sāra, Vaiyākaraṇa Siddhānta Mañjūṣā, etc. are concerned with semantic and philosophical aspects of grammar. They undertake the semantics as well as pragmatics. Mimāṃsā also studies the grammar of Sanskrit language as far as it is useful for the explanation of problems related to the meaning and interpretation of the Vedas.

Pāṇini is supposed to be the pioneer of the derivational system of grammatical studies. It is believed that his Aṣṭādhyāyī does not acknowledge the least significance of the semantics and is purely structural in its outlook. But Pāṇini himself shows great awareness of many semantic notions. The difference in

Pāṇini and others is that he does not make the semantics the 'subject matter' – 'lakṣya' - of his Aṣṭādhyāyī. He utilizes them only when it paves the way to broader grammatical generalizations and to simplify the derivational description. It may be concluded from Pāṇini's attempts to exclude semantics out of the structure based derivation process that he follows the ancient Indian tradition of considering semantics to be the subject matter of a system that is different from the system of his structure based derivational grammar, without raising any doubts but utilizes the semantics to support his system whenever he needs.

Thus, Pāṇini does not oppose the significance of semantics in structural studies and in fact, himself proposes senses necessary for various derivational processes in his Aṣṭādhyāyī. He also establishes the fact that structural changes lead to semantic changes and vice versa. Actually he captures both grammatical–syntactical and lexical senses through his aphorisms. The aphorisms like ‘कर्तरि कृत’<sup>75</sup> puts forward syntactic senses, e.g. agent, object and 'bhāva' etc. as the semantic conditions for the placement of affixes after bases. One can interpret agent, object etc. as syntactic and 'bhāva' etc. as the semantic conditions. Besides, in the aphorisms like सुखादिभ्यः कर्तृवेदनायाम्<sup>76</sup> etc, Pāṇini acknowledges and indicates the various levels of semantics and their contribution in the derivation e.g. in the above said aphorism, 'Sukha' expresses the morphological senses as upapada, the signified agent is the syntactical or grammatical meaning and the agony etc., indicated by the seventh case ending in the aphorism states the general lexical senses expressed by the word. In the words of Dr. Rama Nath Sharma, "Affixes are Pāṇini's means to denote diverse syntactic-semantic relations<sup>77</sup>."

In this way, the conditions required by the derivational procedures are the senses of the word and semantics is always present and interrelated with the structure and per Aṣṭādhyāyī, Kātyayana and Patañjali complete the Aṣṭādhyāyī by adding semantics to the grammatical concepts described in Pāṇini.

In the western tradition of grammatical studies also, many linguists were of the view that consideration of meaning should not dominate grammatical description. In the words of Fries, "A number of American linguists who have been considerably influenced by Bloomfield, have tried to go beyond him in the exclusion of meaning – at least they have proposed, as a theoretical possibility, the total exclusion of the use of meaning in analysis. No example of descriptive analysis accomplished on this basis has appeared<sup>78</sup>." Therefore, total exclusion of the use of semantics in structural analysis is not possible and Pāṇini is no exception.

Thus, Indian grammarians have always given meaning the status of a basis, in theory, for determining the phonemes, morphemes, grammatical categories etc. The structure and semantics are inseparable and supplementary to each other. The study of structure is incomplete in absence of the semantics and the semantic aspect depends upon the exploitation or the attestation of the structural aspects. This interdependence of structure and semantics is quite worth noticing in the Indian poetical works where figures of speech have been decided and divided on the basis of form and meaning. This scheme of categorization existed in the oldest available texts of the Indian poetical system also<sup>79</sup>.

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23. (A 1.4.14)
24. (A 1.2.64)
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31. Ai. Ār. Avatarāṅkā, 9th hymn.
32. Śa. Brā. 1.9.4.7.
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