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Indian Philosophy and Contemporary Issues

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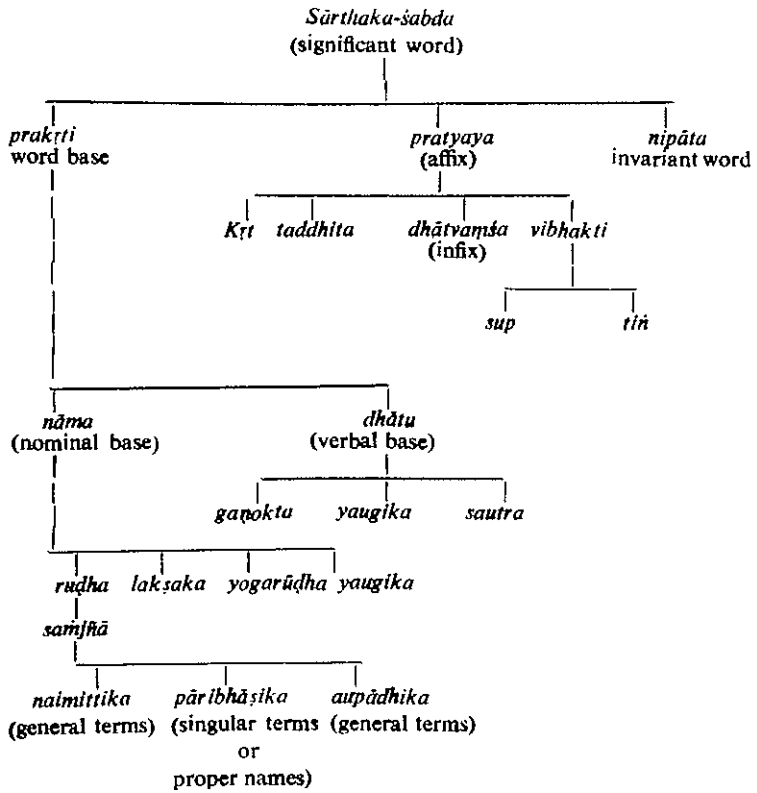
Śābdabodha from the Sentence (vākya)



§ 5. 4 : The Notion of the Sentence (Vākya)

What is a sentence (*vākya*) ? The question is relevant to linguists but also to philosophers, especially to those philosophers who work on the borderlines of logic and language. The Sanskrit grammarians propounded theories about the nature of the sentence (*vākya*) and disputed with the Naiyāyikas (and philosophers sympathetic to the Nyāya system), who held opposite views. I shall discuss those divergent views and explain some important concepts used in their analysis.

In general, the philosophers of ancient and mediaeval India chose Sanskrit as their vehicle of expression. Thus, their views,

especially those about logic and the philosophy of language, were, to a considerable extent, influenced by the peculiarities of the Sanskrit language. Some of their views can be better understood and explained by relating them to the structure and nature of Sanskrit. This should not be regarded as a drawback because one may very well try to reconstruct a general theory of language from their specific remarks. Moreover, it may be interesting and sometimes important for philosophers of language to notice how difference in structure, idiom and vocabulary may eventually cause a difference in the corresponding philosophical theory. It goes without saying that the existence of many natural languages with radically different structural and logical characteristics offers opportunities for logical exploration of 'ways of thinking' far more diverse than those found in any one of them singly. We have seen an illustration of this general point in the previous section. The present section will supply another illustration of the same point.

Kātyāyana defined sentence (*vākya*) as follows : a sentence is that [cluster of words] which possesses a finite verb [as an element][1] The expression used in this definition (viz., *eka-tiṅ*) is a Sanskrit compound consisting of two elements (*eka* = one, *tiṅ* = [word with] verbal ending). This expression suffers from some ambiguity which is shared by most Sanskrit compounds. It might be interpreted as a *tatpuruṣa* (i.e., *karmadhāraya*) compound, in which case the meaning would be that a sentence is what consists of one finite verb. Such an interpretation will, however, be inappropriate, and hence, should be rejected, since it would only include expressions like *pacati* ("...cooks" or "...is cooking") under the class of sentence. On the other hand, if the expression *eka-tiṅ* is interpreted as a *bahuvrīhi* compound, the meaning would be that a sentence is that (cluster of words) which contains one finite verb as an element. The second interpretation is appro-

[1] *eka-tiṅ vākyam*; this is a *vārttika* of Kātyāyana. See *Mahābhāṣya* under *Sūtra* 2.1.1. A close study shows that there is a difference between the views of Paṇini and Kātyāyana regarding the definition of sentence; the former could think of more than one *tiṅ* in a sentence (*cf. tiṅṅ atiṅaḥ*, 8.1.28) whereas Kātyāyana took *eka-tiṅ* as a sentence. The distinction between this and the Mimāṃsā definition based on *ākāṅkṣā* (*cf. arthaikyād ekaṃ vākyaṃ sākāṅkṣaṃ ced vibhāge syāt : Jaimini-sūtra* 2.1.46) was discussed by Bhartṛhari and his commentators. See *Vākyapadīya* II, 3-4.

priate, and hence, has been accepted by the commentators. But this also might lead to difficulties because one might ask whether such expressions as *paśya mṛgo dhāvati* ("look, a deer runs") etc. which contain more than one finite verb should be regarded as *one* sentence or several sentences put together, or no sentence at all.

This problem, however, is connected with the notion of *singleness* of sentence or sentence-unity (*ekavākyatā*)—a concept frequently used and discussed by Indian philosophers. I shall return to this point later.

Kātyāyana's definition was, perhaps, intended to emphasize the importance of the function of finite verbs in each sentence. Thus, Patañjali remarked that there is no sentence which lacks a finite verb. According to this interpretation, containing a finite verb is a necessary condition for being a sentence.

Our point here is that the early Indian grammarians attempted to define the notion of the sentence empirically, using what may be called a formal criterion and without ostensibly referring to the meaning-content of the sentence. It may be remarked, however, that, perhaps in order to combat different philosophical theories of language, some later grammarians, even of the Pāṇinian school, not only brought in semantic notions but also used metaphysical concepts in explaining and defining grammatical categories. Thus, in India, grammarians and philosophers created a common ground for discussing issues of common interest.

It is clear, however, that the Indian grammarians used the notion of *word* (*pada*) in defining the notion of sentence. One might say that, in order to define the notion of *word* it would be necessary to take semantic criteria into account. But, in a highly inflected language like Sanskrit, this need not be so. Paṇini (*c.* fourth century B.C.) defined *pada* or word as that which has either a verbal inflection or a nominal inflection[2], and, thus apparently, used a formal criterion. Gautama, the propounder of the Nyāya school of philosophy, also supported this definition

[1]*na hi kriyā-vinirmuktaṃ vākyam asti : Mahābhāṣya*, ibid.

[2]*suptiṅantaṃ padam : Pāṇini-sūtra* 1.4.14. It may be noted here that Pāṇini also gave several definitions of *pada* in subsequent *sūtras*, e.g. *svādiṣv asarvanāmasthāneṣu :* 1.4.17. But these were required for specific purposes, e.g. for contrasting *pada* with another technical term.

and asserted that a *pada* or word is any sound-sequence which has inflection (*vibhakti*).[1] As is clear from the previous section, in Sanskrit each constituent element of a sentence takes either a verbal, i.e., conjugational inflection, in which case it becomes what we call a finite verb, or a nominal, i.e., declensional inflection, in which case it is said to belong to the *non-verbal*, i.e., *nāma*, category, which includes substantives, adjectives, verbal adjectives, participles, and even adverbs. Although prepositions, e.g., *upasarga, nipāta* etc., do not seem to have declensional inflections, theoretically they are supposed to possess zero-occurrences of nominal inflection. The Sanskrit name for them is *avyaya*, which is interpreted as that which undergoes no modification regardless of gender, case and number.[2] I have called them invariant words in the previous section. Hence, a formal definition of *pada* or word can somehow be obtained within Pāṇini's theory of grammar.

The later Naiyāyikas suggested the use of only semantic criteria in order to determine what is *pada*. Contrary to what even Gautama said, they defined *pada* or word as the meaning-bearing element of a sentence.[3] An "atomic" *pada*, according to them is the smallest meaning-bearing phoneme sequence. A "complex" *pada* is formed out of several "atomic" words or *padas*. According to this theory, even an affix or suffix should be called a *pada* or word, provided one can assign some significance to it. Thus, *pacati* (= "cooks" or "is cooking") is, according to them actually formed out of two constituent *padas*, a root, *pac-a*, meaning the operation of cooking (*pāka*) and a suffix, *-ti*, signifying *prayatna*, i.e., the *mental* (as opposed to *physical*) effort of the person concerned. We may note that *pacati* was regarded by them as a sentence (*vākya*), rather than a *pada*.

Amarasiṃha (*c.* fourth-fifth century A.D.), a well-known lexicographer, gave the following lexical definition of sentence :

[1]*te vibhaktyantāḥ padam : Nyāyasūtra* 2.2.60.

[2]The verse which is often quoted to describe *avyaya* is

sadṛśaṃ triṣu liṅgeṣu sarvāsu ca vibhaktiṣu/
vacaneṣu ca sarveṣu yan na vyeti tad avyayam//

"that which is similar in three genders and undergoes no change in any case-terminations and in any number-suffixes, is called *avyaya*."

[3]*śaktaṃ padam :* Annaṃbhaṭṭa, *Tarkasaṃgraha* (A. Foucher, *Le Compendium des topiques*, Paris, 1949, p. 152).

a sentence is a cluster of verbal and non-verbal words.[1] One may wonder whether a cluster of only finite verbs or nominal words, e.g., *gaur aśvaḥ puruṣo hastī* ("a cow a horse a man an elephant"), constitutes a sentence. This objection can be met, if one wishes, by a careful formulation of the definition. It differs from Kātyāyana's definition only in that it does not stress that a finite verb must be present in a sentence to make it a sentence. By a slight shift of emphasis one might as well say that any cluster of words (no matter which grammatical category they belong to) may constitute a sentence. Some of the later Naiyāyikas did, in fact, accept such a definition of sentence.[2] In such a definition of sentence, apparently, neither semantic nor syntactic considerations have any part to play. We have already noted it in § 5.3. As I have remarked before, the notion of word, according to the later Naiyāyikas, depends on semantic criteria. This was not the case in Amarasiṃha's definition.

The important point, then, in which the grammarians differed from the Naiyāyikas, is this : The latter did not, while the former did, think that the verbal element, i.e., the finite verb, is essential for constituting a proper sentence. This requires clarification, particularly in a language like Sanskrit, where the verb 'to be' is seldom used in normal categorical sentences, words in which can be purely nominal. If we place nouns (i.e., substantives) and adjectives side by side, a Sanskrit sentence (grammatically correct as well as idiomatic) will result, e.g.,

ghaṭo nīlaḥ "the pot (is) blue"
naro 'yaṃ na sundaraḥ "this man (is) not handsome".

Nominalizing transformations by using convenient verbal adjectives, adjectival phrases, word-compounds, etc., which are formed directly or indirectly from some verb or other, are so common in good Sanskrit as to make the use of a finite verb redundant in many contexts. Thus, we have

rāmo vaktā "Rāma (is) the speaker" = "Rāma speaks"
devadattaḥ kṛṣṇa-śritaḥ "Devadatta (is) the one who has resorted to Kṛṣṇa" = "Devadatta has resorted to Kṛṣṇa"
sa bhāravāhī "he (is) a weight-carrier" = "he carries weight".

[1] *sup-tiṅ-anta-cayo vākyam : Amarakoṣa*, s.v.
[2] *vākyaṃ pada-samūhaḥ :* Annambhaṭṭa, op. cit.

Such prevailing features of the Sanskrit language may have led the Naiyāyikas in India to think that a finite verb is not essential to a normal sentence.[1]

There are numerous examples of Sanskrit sentences where a finite verb does not appear at all. To explain such cases, the grammarians appealed to their notion of zero-occurrence of grammatical elements. According to them, a finite verb ('to be', for instance) is not only to be *understood* in such contexts but is to be regarded as constituting the chief element when the meaning of the whole sentence is considered. The Naiyāyikas offered a different method of analysis. According to them, to imagine a finite verb (viz. 'to be') to be always understood in a good many sentences is an unrewardingly complex procedure, springing from a mistaken idea about the function of the finite verb in a sentence. If the juxtaposition of even several *non-verbal* words is sufficient to make an assertion and constitutes what is called a *grammatical* sentence, it would be wrong, so the Naiyāyikas argued, to drag in a finite verb to perform a task which is no longer required. They also cited some peculiar examples where it would apparently be impossible to add any particular finite verb to the sentence. For example,

(1) *trayaḥ kālāḥ* "three the time-stages viz., past, present and future)".

Here, according to the Naiyāyikas, it would be incorrect in Sanskrit to postulate the present plural form of the verb *as* (= "to be"), because this can be correctly applied to one time-stage only, viz. the present, and not to the other two.[2] Similarly, for the future plural form or the past plural form. To drag in three singular finite verbs, one in the past, one in the present, and

[1]Cf. J.F. Staal, 'Reification, Quotation and Nominalization.' in : *Logic and Philosophy : Essays in honour of I.M. Bocheński*, Amsterdam 1965, pp. 151-87

[2]*cf. Nyāyakośa*, Bhimacharya Jhalkikar, Poona, Bhandarkar Oriental Research Institute, 1928, p. 876 line 16-23. Although according to the Naiyāyikas example (1) is perfectly in order, and not just an elliptical sentence where we have to supply the omitted words for the completion of the sense. The present tense is also used to denote the non-temporal; see e.g. J. F. Staal, 'Philosophy and Language', in *Essays in Philosophy presented to Dr. Mahadevan*, Madras 1962, p. 10-25. It could, therefore, be argued that only the present tense form need be supplied.

one in the future (including one *ca* "and"), could only be prompted by an obsession for finite verbs. Some grammarians have defended their theory by saying that in example (1) one should supply the finite verb *jñāyante* ("are known"), i.e., the present plural passive form of the root *jñā* ("to know"). But, according to the Naiyāyikas, this defence was based on a misconception of the significance of counter-example (1) Counter-example (1) derives its force in the context, because it is used as an answer to the question *kati kālāḥ* ("how many time-stages [are there] ?"). Hence, the rejoinder misses the point. (It is only for the sake of English that I am adding "are there" in brackets.)

The grammarians seem to have thought of their definiendum as the set of sentences that are grammatically acceptable. Whether this included semantically unacceptable sentences is not clear from the definitions we have so far considered. When, however, proper attention was given to this problem, the grammarians needed other criteria. Judging from the remarks of some Naiyāyikas, on the other hand, their notion of sentence seems to include not only the set of grammatical sentences, whether semantically acceptable or not, but also the set of sentences that are both ungrammatical and meaningless. This is very lavish theory, and its usefulness may be questioned. This was the view of some Naiyāyikas. They also divided sentences into two groups, viz., *pramāṇa vākya* or 'acceptable' sentences and *a-pramāṇa vākya* or 'non-acceptable' sentences. The *pramāṇa* sentences are meaningful as well as grammatically correct; the *a-pramāṇa* sentences cover the rest, which consists of sentences either ungrammtical, or semantically unacceptable, or both.[1]

The Naiyāyikas used specific criteria to decide whether a cluster of words or a sentence will be both grammatically and semantically acceptable, or, to use their own terminology, to decide whether a sentence will generate a cognitive meaning or cognition (cf. *śābdabodha*) in an "ideal" hearer. For a sentence

[1]Compare : *vākyaṃ dvividhaṃ pramāṇa-vākyaṃ a-pramāṇa-vākyaṃ ceti| tatra pramāṇavākyaṃ ākāṅkṣa-yogyatā-saṃnidhimatāṃ padānāṃ samūhaḥ| ...a-pramāṇa-vākyaṃ tu ākāṅkṣādi-rahitaṃ vākyaṃ| : Nyāyakośa* p. 730. Here a *pramaṇa* sentence is said to be a cluster of words which possesses *ākāṅkṣā, yogyatā*, and *āsatti*, whereas an *a-pramāṇa* sentence is said to lack either any one or any two or all three of these. In the next section, however I shall suggest a different classification.

to generate a cognitive meaning, it is necessary that the *ideal* hearer should have (*a*) a cognition of what is called *yogyatā* or semantical competency, (*b*) a cognition of what is called *ākāṅkṣā* or expectancy, (*c*) a cognition of *āsatti* or contiguity (in space and time), and perhaps also (*d*) a cognition of *tātparya* or speaker's intention. The fourth condition is particularly needed in order to disambiguate an otherwise ambiguous expression.

All these concepts have a long history of development. They were redefined and modified by many authors at different times. There was a theory, favoured by some grammarians and *ālaṃkārikas*[1] as well as by some Naiyāyikas, which maintained that a sentence should be defined as that cluster of words which possess the three properties *yogyatā* (semantical competency), *ākāṅkṣā* (syntactic expectancy) and *āsatti* (contiguity in space and time).[2] A comparatively late view among the Naiyāyikas was that these properties, viz., *yogyatā*, etc., were themselves *directly* responsible for generating *śābdabodha*, i.e., for the knowledge of the meaning of a sentence.[3] I shall not expound each of these concepts here in detail[4] but briefly refer to them in connection with the notion of meaningful and grammatical sentences.

The concept of *yogyatā* has sometimes been defined as the compatibility of one object (or, rather the absence of the absurdity or incompatibility in one object) with another object in accordance with the syntactical (grammatical) connection of the respective words denoting those objects. What was meant by this may become clear from examples. It was argued that the sentence

(2) *vahninā siñcati* "(he) sprinkles (the field) with fire"

[1]I.e. rhetoricians, such as, Viśvanātha and Mammaṭha.

[2]Cf. *vākyaṃ tv ākāṅkṣā-yogyatā-saṃnidhimatāṃ padānāṃ samūhaḥ* : Keśavamiśra, *Tarkabhāṣā*, Poona, Oriental Book Agency, 1953, p. 16.

[3]Usually two different views are mentioned in this connection. The older view is : we know the meaning of a sentence, when we have already known such properties like expectancy (*ākāṅkṣā*) etc. possessed by the sentence. The later view is : we know the meaning of a sentence if that sentence possesses such properties, *viz.*, expectancy etc. Compare : *itaḥ sarve svarūpasantaḥ śābdabodhe hetavaḥ na tu jñātā iti jñeyam* : Jānakīnātha, *Nyāyasiddhāntamañjarī*, IV, Benares, 1885. ("It is to be acknowledged that all these are causes of *śābdabodha* (directly) by themselves, (and) not (that they become causes only when they) are known.")

[4]They have been discussed in detail by K. Kunjunni Raja in his *Indian Theories of Meaning*, Madras, Adyar Library Series 91, 1963, pp. 151-87.

lacks *yogyatā*, while the sentence

(3) *jalena siñcati* "(he) sprinkles (the field) with water".

possesses *yogyatā*. It may be noted that both (2) and (3) are grammatically acceptable, but while (3) is also semantically acceptable, (2) is not. So *yogyatā*, semantical competency, is what differentiates a grammatically acceptable but semantically non-acceptable sentence from a semantically acceptable one. In (2), since fire cannot be said to be a *fit* object to sprinkle with, fire is said to be 'incompatible' with the activity of sprinkling. That sprinkling is to be so related to fire is what is intended by the instrumental construction. Thus, although grammar allows (2), *śābdabodha* or knowledge of the meaning of the sentence will not be generated by it because it lacks the property *yogyatā*.

Expectancy or *ākāṅkṣā* may originally have meant the desire or expectation on the part of the listener roused by the incompleteness of an utterance. But in grammar and philosophy it gradually came to be identified with the syntactic property which a sentence lacks when it is not 'grammatical.' Gaṅgeśa defined it as the accompaniment of one string x with another string y in such a way that x would not generate congnition of the meaning (*śābdabodha* or *anvayabodha*), unless accompanied by y[1]. The Sanskrit example.

(4) *ghaṭam ānaya* "bring a pitcher"

is said to possess the property *expectancy*, because the verb *ānaya* ("bring") is accompanied by an accusative or *karma* viz., *ghaṭam* (a pitcher"), the *agent* (*kartṛ*) or vocative being understood as usual (i.e., because the utterance is in the imperative mood). Furthermore, the string *ghaṭa* (the nominal stem of 'pitcher') is 'grammatically' acceptable in (4), only because it is associated with the accusative ending *-am*. If this ending was not used and a word expressing the relation of accusative or *karma* was used instead, other things remaining the same, the whole string would be regarded as disconnected and ungrammatical. The counter-example which is said to lack expectancy is given as:

[1]Cf. *yasya yena vinā svārthānvayānanubhāvakatvaṃ tasya tatpada-saṃnidhānam : Tattvacintāmaṇi* IV, Asiatic Society, Calcutta.

(5) *ghaṭaḥ karmatvam ānayanaṃ kṛtiḥ* "a pitcher, to be an accusative, bringing, an effort".

This is ungrammatical, since it violates syntactic rules of the language. But is it a meaningful expression? It is contended that knowledge of a "connected" meaning of the whole is not possible here, because the discrete elements do not have any *syntactic* relation to each other.

The property *āsatti* or contiguity refers to absence of any unnecessary intervention or interval (*temporal* when the string is uttered, and *spatial* when it is written) between word-elements of a sentence. As a counter-example which lacks this property we sometimes find:

(6) *girir bhukto vahnimān Devadattaḥ* "the hill has eaten has fire Devadatta".

This sounds nonsensical even in Sanskrit where there do not appear to be *strict* rules about word order. One may construe this string as two sentences, viz., *girir vahnimān* (= "the hill has fire") and *bhukto Devadattaḥ* (= "Devadatta has eaten"). But as a single sentence it fails to generate any knowledge of its meaning.

It is evident from the brief exposition of these three notions, viz., semantical competency, expectancy and contiguity, that they are among the important properties of a grammatical and meaningful sentence. In other words, they turn an ungrammatical and nonsensical string into a grammatical sentence in such a way that we may know what it means. But, if sentence or *vākya* is taken in the general sense of any word-complex, as some Naiyāyikas obviously intended, these properties do not form part of the definition of the sentence. (For problems of such a definition, see § 2.8.)

A sentence is significant or meaningful if it can generate knowledge in a hearer who is a native language-user, whenever he listens to it. We can conceive of an 'ideal' hearer who knows the language and also knows 'how to do things with' language, and who reacts 'rationally' and 'mechanically' when he hears a grammatically correct and semantically coherent sentence. This 'rational' and 'mechanical' reaction, according to the Indian theorists, is produced by the utterance generating a particular direct cognition (*jñāna*) in the hearer, very much as blowing a

horn produces a particular vibration in the air. This theory also assumes that the hearer is reasonably attentive, i.e., not preoccupied, and that no other negative (non-linguistic) condition is present so as to stop the required cognition from being generated. As said before, the Indian theorists called this cognition a *śābdabodha* of the sentence concerned. That a hearer knows what an utterance means signals that the utterance has generated such a *śābdabodha*. This cognition or knowledge (i.e., *śābdabodha*) is a result of the utterance, and hence, should not be confused with the speaker's cognition which is the speaker's private property and which might have prompted the utterance originally.

To describe the content of a *śābdabodha* may be said to be equivalent to describing the "meaning" of the utterance. A *śābdabodha*, i.e., knowledge of some sentence-meaning, belongs to the type which the Naiyāyikas call *savikalpa jñāna* or *qualificative* cognition[1]. A qualificative cognition is always expressible in language in some way or the other. Thus, the content of a *śābdabodha* can always be expressed in the language. We may call the expression of the content of a particular *śābdabodha* a 'paraphrase' of the utterance concerned. But note that a 'paraphrase', in the sense we are here concerned with, is not exactly equivalent to supplying synonyms for each constituent word and preserving the grammatical structure of the original as far as practicable. Roughly, we can characterize the original utterance as an utterance or sentence in the object-language, and its 'paraphrase', i.e., the expression of its *śābdabodha*, as the description of the same utterance in a suitably chosen, corresponding metalanguage. To provide a structural description of the sentences of the object-language, certain metalinguistic concepts were developed by the Indian theorists. A rough characterization of these concepts may be in order.

The content of the basic type of *qualificative* cognition (*savikalpa jñāna*) is analysed chiefly under two categories, the qualificand (*viśeṣya*) and the qualifier (*viśeṣaṇa* or *prakāra*). A cognition of this type can be roughly described as knowing

[1]The expression *savikalpa jñāna* has sometimes been translated as "determinate cognition" which I do not consider very illuminating. I have tried to explain the notion in some detail, translating it as "qualificative cognition." See my *The Navya-nyāya Doctrine of Negation*, Cambridge (Mass.), 1968, p. 15.

something (i.e., the qualificand) as something (i.e., the qualifier). Thus, in the cognition

(7) *raktaṃ puṣpam* "the red flower" or "the flower [is] red"

a flower is the qualificand and the colour red is its qualifier. Usually (as in the present case) the qualificand is a *thing* and the qualifier is one of its properties which the cognition happens to mention; but this is not always the case. For example, in the congnition

(8) *puṣpe raktaḥ* "red-colour (occurs) in the flower"

the colour red is the qualificand and a property which may be expressed as "occurrence-in-the-flower" (*puṣpa-vṛttitva*) is the qualifier. For, in an extended sense of 'property', to occur in a particular flower may be treated as a property of the red colour. Consider the following cognition:

(9) *rakta-puṣpavatī latā* "the creeper possesses (a) red flower"

Here, broadly, the qualificand is a particular creeper, and the qualifier is a particular red flower. But 'a red flower' also denotes a composite concept analysable into flower as the qualificand and red-colour as the qualifier. The Indian logicians went much further. They analysed the concept denoted by 'the flower' (or 'the creeper') into a flower-individual (or, a creeper-individual) as the qualificand, and the generic property flower-ness (or, creeper-ness), which is roughly equivalent to flower-universal (or, creeper-universal), as the qualifier. Using the expression "Q (xy)" for "x which is qualified by y"[1] the first variable x standing for the qualificand and the second, y, for the qualifier, the structural analysis of the meaning of the sentence (9) can be given as:

(10) Q (Q (ab) Q (Q (cd) Q(ef)))[2],

[1]Note that Q (xy) denotes a *complex of terms* and not a *proposition*. Alternatively, use might be made of *restricted-variables*, writing Q (xy) for the relation "x is qualified by y" and $_{\alpha x}$ Q(x, y) for "an x such that Q(xy)" (*cf.* J.F. Staal, 'Correlations Between Language and Logic in Indian Thought', *Bulletin of the School of Oriental and African Studies* 23 (1960) pp. 109-22.

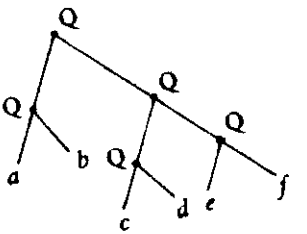
[2]I offer this symbolic translation instead of a necessarily ghastly English translation of the Sanskrit expression : *raktatva-viśiṣṭaḥ yo raktaḥ tad-*

where '*a*', '*b*,' '*c*', '*d*', '*e*', and '*f*' stand respectively for a creeper, creeperness, a flower, flower-ness, red-colour, and redness i.e., red-universal. By manipulating symbols and using the principle of substiution of elementary logic, (10) can be obtained from the initial formula:

(11) Q(*xy*)[1]

It is to be noted that, of the elements '*a*', '*b*', '*c*', '*d*', '*e*' and '*f*' some represent qualificands, some represent qualifier and some both, i.e., a qualificand in the immediate context and qualifier in the broader context and vice versa. But the creeper, represented by '*a*', holds a special position. It is simply a qualificand with respect to others and never a qualifier. Therefore, it is described as the *chief* qualificand (*mukhya-viśeṣya*) of cognition (9).

Equivalently, (10) can be represented by constructing the following diagram[2].



To increase the power of this symbolic language we may use the following two rules of combination:

(12) Q(*mn*) & Q(*no*)→Q(mQ(*no*)).
(13) Q(*mn*) & (*mo*)→Q((*mn*)*o*).

"Q(*m*Q(*no*))" can be read as "*m* which is qualified by *n* which is, in turn, qualified by *o*". Similarly, "O((*mn*)*o*)" can be read

viśiṣṭam yat puṣpatva-viśiṣṭapuṣpaṃ tat-prakārakaṃ latātva-vaśiṣṭa-latā-mukhya-viśeṣyakaṃ jñānam; "it is a cognition, whose chief qualificand is a creeper qualified-by-creeperness, which creeper is qualified (also) by a flower-qualified-by-flowerness, which flower is (again) qualified by red-colour, which red-colour is qualified by red-universal."

[1]First obtain 'Q (Q (*cd*) Q (*ef*))' from 'Q(*xy*)', by substituting 'Q(*cd*)' for '*x*' and 'Q (*ef*)' for '*y*'. Then substitute 'Q(*ab*)' for '*u*' and 'Q (Q (*cd*) Q (*ef*))' for '*v*' in 'Q (*uv*)', and obtain (11)

[2]I owe this alternative suggestion to Professor J.F. Staal.

as "*m* which is qualified by both *n* and *o*". Further, since the connective '&' is symmetric, 'Q((*mn*)*o*)' is equivalent to 'Q((*mo*)*n*).'

Thus, if in a certain discourse it is not necessary to talk about redness, i.e., the universal *red*, cognition (7) can be represented as:

(14) Q(*cd*)*e*).

Similarly, cognition (9) can be represented, without any reference to entities like creeper-universal, flower-universal or the universal *red*, as follows:

(15) Q(*a*Q(*ce*)).

(15) can be read as "a creeper-individual which is qualified by a flower which is qualified by red-colour". Similarly, (14) can be read as "a flower-individual which is qualified by both flowerness and red colour". This, incidentally, shows that the qualificand-qualifier distinction does not always concide with the subject-predicate (*uddeśya-vidheya*) distinction of propositions, because in the corresponding proposition "the flower is red" we regard 'red colour' as the predicate (*vidheya*) and not 'flower-ness'.

We can now proceed to explain why the Indian theorists claimed that 'paraphrases' of all declarative sentences present a structural similarity, i.e., are analysable into the qualificand-qualifier model. The 'paraphrase' or the *śābdabodha* of a sentence should reveal that one element is the *chief* qualificand and that the rest play the part of either qualifier or qualificand or both. The Naiyāyikas accepted the convention that it is the nominative or agent (or, more precisely, the word with the first case-termination) which expresses the *chief* qualificand of the corresponding *paraphrase*, while the grammarians accepted the convention that it is the finite verb which expresses the *chief* qualificand.[1]

Thus, the sentence:

(16) *harir vihagaṃ paśyati* "Hari sees a bird"

will, according to Nyāya, generate as the paraphrase expressing its *śābdabodha*:

[1]This is, I think, a reasonable interpretation of the two rival theories about the analysis of the structure of a *śābdabodha*, *viz.*, *prathamāntārtha-mukhya-viśeṣyaka śābdabodha* and *dhātvartha-mukhhya-viśeṣyaka śābdabodha*. To avoid complications I have not referred to the Mimāṃsā theory in this connection.

(17) *vihaga-karmaka-darśanānukūla-kṛti-mān hariḥ* "Hari is *qualified* by effort generating the activity of seeing which has a bird as object".

According to the grammarians, it will generate as the paraphrase expressing its *śābdabodha*:

(18) *vihaga-karmaka - darśanānukūla-vyāpāro hari-karttṛkaḥ* "the operation generating the activity of seeing which has a bird as object is qualified by Hari as its doer (i.e., is done by Hari)".

It should be noted that all the elements of the orginal sentence (16) can be correlated to one part or the other of each *paraphrase* given above. Each paraphrase also reveals the qualificand-qualifier structure of the original sentence. The philosophical bias of the Nyāya school prompted the Naiyāyikas to make the noun-substantive, Hari, the chief qualificand. The grammarians, on the other hand, wanted to emphasize the function of the finite verb, and hence, described its meaning as the chief qualificand.

Using our notation, (17) can be represented as

(19) Q(*h*Q(*k*Q (*sb*)))

where '*h*', '*k*,' '*s*' and '*b*' are abbreviations' for 'Hari', '*kṛti*' (= 'mental effort'), 'seeing' and 'bird' respectively. Note that '*h*' corresponds to the agent (nominative) of (16), '*k*' corresponds to the verbal suffix "*-ti*" (according to the Nyāya theory of language, which, however, differs from that of some grammarians) '*s*' corresponds to the root "*dṛś*" and '*b*' to the *karma* or accusative *vihagam*. Note also that seeing is said to be qualified by a bird through the accusative or patient (*karmatva*) relation (i.e., the relation of having it as its object), effort is said to be qualified by such seeing through the causal relation (*janakatā*, i.e., in respect of being its generator), and so on. Furthermore, one should note that the *karma* or accusative relation is expressed by the accusative ending used in the word-base *vihaga-* (= "bird"), but the generator (*janakatā*) relation is expressed by what is called *saṃsarga-maryādā*, i.e., it is obtained from syntactical properties of the sentence concerned. Similarly, the relation (viz. inherence) through which the chief qualificand, Hari, is said to be qualified by the property *kṛti* (= mental

effort) is also given by a syntactical connection (i.e., by *saṃsarga-maryādā*).[1]

Armed with the conceptual apparatus already described, the Naiyāyikas as well as the grammarians found it easy to define the scope of a *single* sentence, i.e., the notion of *sentence unity* (*eka-vākyatā*). If the *paraphrase* reveals only one *chief* qualificand, the corresponding utterance is a *single sentence* (although possibly a complex one). But if several (i.e., more than one) *chief* qualificands are revealed by the paraphrase, the corresponding sentence is a *multiple* one. Thus, examples like "Look a deer runs," etc., should not give the grammarians any trouble, for, in spite of there being apparently two finite verbs, there is only one 'chief' finite verb whose meaning constitutes the *chief* qualificand in the usual paraphrase or *śābdabodha*.

Some grammarians supported their theory that the meaning of the finite verb becomes the chief qualificand in the cognition that is generated as *śābdabodha* with the following examples:

(20) *caitreṇa supyate* "[It is] slept by Caitra" (Passive construction), i.e. "Caitra sleeps".

(21) *śṛṇu megho garjati* "listen, the cloud roars".

The *śābdabodha* derived from these two sentences is represented by the grammarians as follows:

(22) *caitra-karttṛkaḥ svāpaḥ* "sleeping is qualified by Caitra as its doer".

(23) *megha-karttṛka-garjanaṃ śṛṇu* "listen to the roaring which is qualified by the cloud as its doer". (To avoid unnecessary complications, I have given the *śābdabodha* i.e., paraphrase of the sub-sentence only.)

Note that in (22) sleeping (the meaning of the verbal root *sup*) is the chief qualificand, and in (23) roaring (the meaning of the root *garj*) is the qualificand which, in turn, may be related to the meaning of the principal verb "listen". Note also that (20) has no word with the first case-ending because it contains an *intransitive* finite verb in the passive; but it does have an *agent* (*kartṛ*), marked by the instrumental ending,

[1]This concept has been treated as identical with the *tātparya-śakti* in the Later Nyāya school. See also K. Kunjunni Raja, pp. 187, 209, 221.

because the sentence is in the Passive construction. In this case it will be difficult to maintain with the Naiyāyikas that the meaning of the word with the first case-ending (*prathamā*) should be construed as the chief qualificand of the resulting *śābdabodha*; for (20) has no word with the first case-ending. and (21) has *megho* (which is the word with first case-ending), whose meaning, i.e., the cloud, cannot be suitably construed as the object of listening.

The Naiyāyikas, however, in support of their theory, mentioned example (1) given above as well as examples, such as:

(24) *ghaṭo na bhavati paṭaḥ* "a pot is not a cloth".

(25) *aśvo gacchaty ānaya* "bring (back), the horse goes away"

These two will give the following 'paraphrases'.

(26) *paṭa-bhedavān ghaṭaḥ* "a pot is qualified by the mutual absence of cloth".

(27) *gamana kartāram aśvam ānaya* "bring (back) the horse which is qualified by the activity of going". (Here, as in (23), only the paraphrase of the sub-sentence has been given.)

Note that (25) counterbalances the force of the argument put forward with reference to example (21). With regard to (20), the Naiyāyikas say that since there is no word with the first case-ending, the meaning of the verbal root takes its place. (21), on the other hand, will be interpreted as

(28) *garjana-kartāram megham śṛṇu* "listen to the cloud which is qualified by roaring".

Although it is true that we do not hear the cloud but its roaring, yet it is not unnatural to say that we hear the roaring cloud. In such cases, the Naiyāyikas appealed to the following principle.[1]

If something is predicated of a *qualified entity* (*sa-viśeṣaṇa*) and if the predicate is not applicable to the qualificand as such, then the predicate is supposed to be applicable to the qualifier only.

The dispute between the grammarians and the Naiyāyikas may

[1]*cf. sa-viśeṣaṇe hi vidhi-niṣedhau viśeṣaṇam anubhavataḥ sati viśeṣye bādhe : Nyāyakośa*, p. 877.

be accounted for by reminding ourselves of the first grand division of word-constituents of sentences, which is twofold : into verbal words and nominal words. Thus, initially, the choice lies between these two. A verb phrase usually refers to some action or state, and a nominal phrase often refers to some object or substance which is in that state or performs (undergoes) that action. The grammarians were more interested in forming rules about phonemes and morphemes and about the inflectional modifications of different words. They may have been struck by the fact that it is in relation to the meaning of the verb that the nominal stems take different endings. The same nominal word "Hari", for instance, takes different case-endings as its relation to the verb *jñā* ("to know") changes, thereby yielding different sentences, e.g.:

harir jānāti "Hari knows"—nominative relation,
harim jānāti "(One) knows Hari"—accusative relation,
hariṇā jānāti "(One) knows by Hari"—instrumental relation,
harer jānāti "(One) knows from Hari"—ablative relation, and so on.

This may have led some grammarians to think that the verb is 'all-powerful' in a sentence and holds all other elements together as its attributes or qualifiers.[1]

The Naiyāyikas, on the other hand, were more interested in ontological categories, In their ontological scheme, the idea of substance (*dravya*), the obvious reference of most nominal words, is predominant. Substance is regarded as the substratum in which different properties, viz., qualities, actions, etc., reside. According to them, the nominative (or the word with the first case-ending) usually designates the substratum or the *chief* qualificand, to which other objects are related as properties or qualifiers, designated by other elements of the sentence.

[1]One might argue that the same root *jñā* (="to know") can also take different conjugational endings with the same noun-subject to indicate different tenses, moods, etc. But such variation in conjugational suffixes does not depend upon, and hence, is not determined by, the variation of the verb's relation with the noun-subject. The point here is this : in determining case relations the verb can be said to be an important factor in some sense, but in determining tenses and moods the noun-subject is not an important factor in the same sense.

In view of the above, we can make the following observations : (i) Sentence or *vākya* may be initially defined as any word-complex. In order to account for only those sentences which are accepted intuitively as both grammatical and meaningful, the definition has to be qualified by introducing such notions as competency (*yogyatā*), expectancy (*ākāṅkṣā*) and contiguity (*āsatti*). (ii) For a sentence to be meaningful, it is necessary that it can be understood by the hearer, which in turn means, according to the Indian theorists, that it can generate a corresponding cognition in the hearer. Such a cognition, called *śābdabodha*, can be represented by a *paraphrase*. (iii) This cognition can only arise from a sentence which is syntactically well-formed (as already suggested by the notion of *ākāṅkṣā*), i.e., in which the elements are interrelated in accordance with the syntactic and inflexional rules. (iv) The paraphrase which represents the *śābdabodha* can be analysed in terms of the qualificand-qualifier structure. (v) The notion of *śābdabodha*, thus explicated, may be taken to correspond to the notion of knowing the meaning of a sentence.

§ 5.5 : Grammaticality and Meaningfulness

In the previous section, I have suggested that the notion knowing of *śābdabodha* in the Indian context may be taken to correspond to the notion of the meaning of a sentence. In this concluding section, I shall further elaborate certain issues connected with this point. *śābdabodha* is a piece of knowledge that arises in the hearer from the utterance of a sentence. Sometimes it is translated as 'verbal testimony' or rather 'knowledge derived from verbal testimony' (in traditional terminology) as opposed to knowledge based upon perception and inference. For, short 'śābdabodha' may be translated as' verbal knowledge', provided we are careful so as not to contrast the word 'verbal' with 'real'. For, sometimes it may be claimed that somebody has only "verbal" knowledge but no "real" knowledge. Verbal knowledge is indirect knowledge as much as inferential knowledge is, but this cannot weaken its claim to knowledge-hood.

Common sense takes verbal knowledge to be less reliable than perception and inference. For, in acquiring verbal knowledge we have to depend essentially upon the reliability of the speaker,

upon his honesty, competence and authority, and these criteria are proverbially uncertian. Traditionally, a reliable or trustworthy speaker should have the following virtues: freedom from error or illusion, lack of the intent to deceive, and lack of any defect in his sense-faculties (cf., *bhrama-vipralipsā-karaṇāpāṭava*). Such a person is called *āpta*. Vātsyāyana has said under *Nyāya-sūtra* 1.1.7 that any person can be an *āpta*, irrespective of his caste, creed or religion. Contrary to our common belief, one should note that neither perception nor inference should be in any way better than verbal knowledge as far as reliability or certainty is concerned. For reliability of the sense-organs, adequacy of the evidence or reason (for inference) and trustworthiness of the speaker—all sail by the same boat. As far as Nyāya is concerned, none of them would be infallible. Each of them can, on occasion, mislead and generate error. But, nevertheless, knowledge is generated from all these sources.

The hearer's knowledge or the cognitive episode arising in the hearer from the utterance of a sentence is said to grasp the 'meaning' (*artha*) of the sentence uttered. Most Indian philosophers of language agree on this point, viz., on such an interpretation of the term *artha* (meaning) in the context of a sentence. What this episode *grasps* has a 'structured content' (cf., *viṣayatā*) which we can make more intelligible by calling it the structure of a thought. When we say that a particular hearer *a* understands the meaning, we mean thereby that *a* has a particular 'structured' thought. It may be said, therefore, that the Indian philosophers were concerned with the 'hearer's meaning' rather than the 'speaker's meaning'. Meaning is not what is (or happens) in 'the head of' the speaker, and arguably, it is also not what happens 'in the head of' the hearer. For, the hearer may hear and not understand the meaning at all or misunderstand it. Sometimes one may say, "I have heard what you said, but I have not comprehended (or *fully* comprehended) the meaning." Presumably, we have access to the 'inner world' or the mind of neither the speaker nor the hearer. But the hearer is conceived here to be an 'ideal hearer', who is any competent language-user. The structured thought that is supposed to arise in such an ideal hearer is something that is intersubjectively available: it is presumably shared by any competent language-user who hears the sentence uttered.

In this way, it is claimed that an attempted account or analysis of the knowledge of such an ideal hearer would be an account of the *meaning* of the sentence. To be sure, the knowledge-episodes of all the individual hearers may be distinct and different as episodes, but they all share the same structured content. Obviously, we have to exclude a lot of other variables from this concept of the knowledge-episode of the ideal hearer. Various implications and presuppositions of the statement made may be understood by the hearers, and they may be understood differently at the same time. But these would not be our concern here. The ideal hearer is like a computing machine, where the input would be the utterance and the output would be a corresponding uniquely structured thought or knowing episode.

In this style of philosophizing, or in this way of doing philosophy of language, the structured content of the ideal hearer's knowledge is regarded as giving the so-called semantic interpretation of the sentence heard. It is maintained that each grammatico-syntactic element along with the lexical items contributes in some way or other to such a semantic interpretation captured in the knowledge-episode of the hearer. Such a knowledge-episode arises in the ideal hearer as soon as he understands what is said although there are no observable behavioral criteria, unless and until the hearer acts accordingly or does something in reply. We assume that the hearer possesses the knowledge-episode, provided he has been an attentive hearer and a competent language-user.

The grammatico-syntactic elements of the uttered sentence can be conveniently mapped into the analysis of the structured content of the said knowledge-episode of the hearer. The term *śābdabodha* or *anvayabodha* is sometimes used to mean simply the description of this mapping. This knowledge of the hearer is also propositional or qualificative in the sense that its structured content admits of a qualificand-qualifier analysis. Besides the qualifier and the qualificand, the simplest structure contains a third element, which we may call the 'connector' or 'mixer'. There are generally two types of connector: identity and non-identity. Non-identity has various sub-categories: owner-owned, locus-locatable, content-ness, etc. These connectors are, in fact, only semantic mirror-images of various syntactic and grammatical elements represented at the surface structure of the language by

various inflections, etc. The usual rule of thumb is that if the two expressions have appositional suffix or syntactic parallelism, then the corresponding connector would be an identity (*abheda*) between the 'meanings' or the objects they refer to. Otherwise, the connector would belong to the sub-category of 'non-identity' (*bheda*) connectors. At times, we can perceptually anticipate a connection between two items; for example, we see that a cat is on the floor. The object-complex, the reality which gives rise to the perception, has no doubt a structure, but it has a 'neutral' structure. It is neutral in the sense that it may give rise to different perceptions with different sorts of structure. We may, for example, see either that the cat is ON the floor or that the floor is UNDER the cat. However, the utterance of the sentence "The cat is ON the floor" would generate a piece of knowledge in the hearer with a determinate structure. This is one of the distinctions that Navya-nyâya emphasizes as existing between a perceptual knowledge and verbal knowledge. In other words, verbal knowledge cannot be subsumed under what is called a *mental* perception generated by the remembering of the meanings of words, etc. (See also § 5.3 for similar distinction between verbal knowledge and inference.)

Let us note that although the English translation, "the cat is white," of a corresponding Sanskrit expression "śveto märjäraḥ" is generally acceptable, a more correct translation, according to Nyâya, would be "The cat (is) something white or a white thing." Since the two expressions have the same nominative inflection, and hence the required syntactic parallelism, the knowledge of the hearer generated by this utterance would have a structured content: The cat is identical with a white thing. The non-verbal (perceptual) knowledge-episode may, however, have alternative structured contents as expressed by such sentence-constructions: "There is white colour in the cat" and "The cat has white colour." This is how one can explain the dictum in Sanskrit: *śabdabodhe nämärthayor abhedänvayaḥ*. Notice that that the last two sentences are only verbal expressions of two different perceptual episodes. The ideal hearer's knowledge derived from such utterances would again be different.

Navya-nyâya authors suggest that the mappings of the hearer's knowledge can be done as follows:

"The cat is on the floor (*bhūtale mārjāraḥ*)".—UTTERANCE
The hearer's knowledge: The cat is qualified by occurrence on the floor, i.e., by the floor through the connector of locatability (*ādheyatā*).
The syntactico-grammatical analysis of the sentence: *bhūtala* (floor) locative *i mārjāra* (cat) nominative *s*.

It is said that the nominative *s* indicates the chief qualificand (*mukhya viśeṣya*) for the hearer. Therefore, the cat, i.e., the 'meaning' of the object referred to by the associated word is the chief qualificand. The locative *i* signifies the connector of locatability (*ādheyatā*), and this links the associated word with the other word in such a way that the object referred to by the associated word ("floor") becomes the locus of the cat. In this way, the ideal hearer's knowledge is described by Nyāya as one whose qualificand is the cat corresponding to the expression "the cat", the qualifier is the floor (corresponding to "the floor"), and the connector which makes such qualification possible is locatability signified by the suffix "*i*" (or "on"). Since this piece of knowledge is generated by the utterance of the said sentence, we may say that a semantic description of the uttered sentence has been given in this way from the hearer's point of view.

One may now ask: Since the above three elements (to be found in an atomic sentence) are distinct, what is it that combines them into one unity? The Nyāya answer is: *ākāṅkṣā* 'syntactic and inflectional expectancy'. Let us come back to the discussion of this very important concept. The term certainly has some psychological connotation, but in Navya-nyāya it does not stand for any psychological state of either the speaker or the hearer. It stands for a property of the elements of a sentence of a language. It is the sequential relation (cf., *ānupūrvī*) between words and their suffixes as well as between the words. To be precise, it refers to the interdependence of the lexical items (nominal and verbal stems) and the grammatical elements (nominal and verbal suffixes) as well as the interdependence of certain grammatical categories (verbs, agents, objects, instruments, etc.) among themselves. It is believed that all these items or units are by themselves 'incomplete' or 'unsaturated; and hence, require or 'expect' others to complete the sentence. The

sentence is thereby rendered grammatically acceptable and it acquires the *minimal* meaningfulness. Identification of these units or elements of the sentence is what gives its grammatico-syntactic Ākāṅkṣā. It is thus a property of the linguistic elements, and is regarded by Nyāya as a pre-condition for the arising of the 'ideal' hearer's knowledge. This is not at all surprising, for the hearer cannot obviously interpret the sentence semantically (or understand its meaning) unless he has some notion of its grammatico-syntactic structure.

A sentence, as we have seen, is not simply a cluster of words, but a cluster of words with a syntax which presumably expresses a complete thought. Nyāya takes an atomistic view of language, and hence, believes that the meanings of words (stems and suffixes) come together to constitute the complete sentence-meaning or the structured content of the ideal hearer's knowledge. In this view, therefore, there arises a problem. Suppose, the atomic elements are given or presented in a manner which will not obey any syntactic or grammatical rules of the language, although they are being presented in that language. It would be an almost impossible feat to give an illustration. But let us try. A sequence of words will be given, but it will not reveal any syntax or observe any grammatical rules. Nyāya argues that the hearer's knowledge in that case would not arise, for the pre-condition, *ākāṅkṣā*, is lacking. Udayana believes that the hearer does not have to have a direct knowledge of *ākāṅkṣā*, but simply the presence of this property in the uttered sentence would be enough to pave the way for the arising of the hearer's knowledge (provided other conditions are also fulfilled).[1] One may interpret this as saying that a sentence must observe the syntactico-grammatical rules, i.e., must be grammatically acceptable, and this property of grammatical-ness by its mere presence would be one of the required conditions for generating the ideal hearer's knowledge.

Consider the sentence :

Rāmo ghaṭam ānayati ("Rama brings a pot").

It generates, according to Nyāya, a knowledge of the form : (The qualificand) Rama is qualified by the action which is conducive to the fact of bringing whose object is a pot.

[1] *Nyāyakusumāñjali*, (Udayana), Ch. 3. verse 13.

The following table shows the mapping of the linguistic elements into the constituents of the hearer's knowledge :

Linguistic elements	*Components of the knowledge*
The word "Rāma"	Rama
The verbal suffix *ti*	The action
The verbal stem "bring" (*ā-nī*)	The fact of bringing
The word "ghaṭa"	A pot
The nominal accusative suffix "*am*"	The object of

Now, if all the constituents of knowledge are presented without a syntactically and grammatically well-formed sentence, it would not generate the required knowledge in the ideal hearer. One may utter

("Rāmo ghataḥ karmatvam ānayanam kṛtiḥ" ⇒)

"Rama the action the fact of bringing a pot the object of". Here the hearer cannot *legitimately* understand the required meaning, and hence, he would not have the required knowledge, although all the components are given. We say "legitimately", because he may on occasion make an intelligent guess, but obviously that is not our concern here. We do make intelligent (and sometimes not so intelligent) guesses when we hear the so-called ungrammatical sentences. But this will not fall into the category of *śābdabodha*. Although the example is a little bizzare, the point of the argument is, I think, clear. If a sentence does not observe certain basic syntactico-grammatical rules of the language concerned, it also lacks *ākāṅkṣā*. I shall presently address myself to the question whether ākāṅkṣā ensures grammaticality of a language-sentence.

We have seen in section 5. 4 that there are two other pre-conditions that are mentioned in this connection. One is *āsatti*, which is a 'physical' property. It is contiguity or proximity of the linguistic elements in time and space. It pertains to the physical aspects of the linguistic elements, while the other *yogyotā* (compatibility or competency) pertains to the semantical aspects (meaning-aspects) of such elements. It is obvious that the relevant linguistic elements must be presented (uttered) without long and unnecessary gaps or interventions. Such gaps would destroy the sentence-hood of a complex of elements.

Let us take a close look at the notion of *yogyatā* again. This is sometimes defined as the lack of any disconnection or impos-

sibility of connection among the atomic meaning-elements delivered by the atomic linguistic elements. It ensures the (conceptual) possibility of one item being connected with another, so that both can figure in the structured content of the hearer's knowledge. The concept of possibility is a modal concept, and hence, there may be a problem of modality implicit in the concept of *yogyatā*. The other problem that is involved here is that of determination of the borderline between grammaticality and semantic acceptability of a combination of linguistic elements.

According to some, the possible states of affairs include the actual (modern modal logicians say that the actual world is a member of the set of possible worlds). But possibility may also be understood in the sense of unactualized possibilities (cf., Quine's fictitious philosopher, Wyman, in his "On what There Is ?").[1] A still narrower concept would be to limit ourselves to future possibilities only. The Nyāya concept of *yogyatā* seems to be broad enough to coincide with the first kind of possibility. But this would raise a lot of problems. The typical examples which are said to be impossible (i.e., incompatible 'a-yogya') combinations are as follows :

1. (He) wets with fire.
2. The horn of a rabbit.
3. The (water—) lake has fire.

To facilitate our discussion, I shall add several other examples, which Udayana listed in his *Ātmatattvaviveka*.[2] According to Udayana's commentators, Bhagīratha and Raghunātha, all these illustrate different types of impossibility :

4. This mother is a barren woman.
5. I am mute (speechless).
6. I do not know this.
7. There is an elephant in my ear, and it is roaring, hence, speak about the medicine.

The first two seem to illustrate some sort of metaphyiscal or ontological impossibility. They are not only non-actual, but also impossible in the sense that the first item (fire or rabbit) cannot be related to the second item (wetting or horns) in the way indi-

[1]Quine, W. V., *From a Logical Point of view*, pp. 1-19.
[2]*Ātmatattvaviveka*, (Udayana), ch. 2, p. 533 (Bib. Indica edition).

cated. The rabbits do not have horns, and fire is not used to wet but to dry. Could we argue here, just as it has been argued by some in another connection, that creatures like unicorns are *possible* objects, although they are not actual, that it is possible for rabbits to grow horns, for that would not take the rabbit-hood out of a rabbit? In other words, it does not follow from the definition (or the essence) of a rabbit that it cannot have horns. Similarly, one may even say that there may be *liquid* fire in some possible world where we can wet or sprinkle the ground with it. But this line of argument would be deplored by Nyāya, for the two combinations then would not illustrate incompatibility. And if they are not incompatible, the ideal hearer would have a knowledge of their 'meanings', for he would be aided by, among other things, an awareness of their possibility. The general Nyāya position is, however, that these combinations do not generate the required knowledge in the ideal hearer, for they lack *yogyatā*. Other examples are clearly intended to show patent (or logical ?) impossibility. Water-fire may still be in the borderline, but others can be said to be logically impossible without further ado : motherhood and barrenness, speech and speechlessness, knowing and not knowing and listening where listening is impossible. (The last example was a bit enigmatic, and different interpretations were given by different commentators. But I forbear to enter into them here.)

It may be surmised from such discussion that for Nyāya there is no strict distinction between logical impossibility and factual impossibility. Incoherent and incompatible conbinations are in the domain of the impossibles.

The Nyāya theory of *Śabdabodha* obviously allows that the domain of 'possible' combinations excludes the above-mentioned impossible combinations, but it would include, besides the actual or 'true' combinations, a large number of combinations or word-clusters that would pass the test of physical proximity (*āsatti*), that of the said syntactico-grammaticality (on our interpretation of *ākāṅkṣā*), and also that of possibility or compatibility (*yogyatā*), but would still fail to generate a true cognition or knowledge in the ideal hearer. Why ? Predominance of false sentences uttered by deceitful or ignorant or incompetent persons is a matter of common experience. Hence, the hearer, no matter whether or not he is aware of the speaker's intention or his

qualifications, would have a false awareness (a false belief) with a structured content similar to that of a piece of knowledge. In such cases, we usually say that the uttered sentence is meaningful but false. In view of this problem, further conditions were imposed upon the situation giving rise to an episode of verbal knowledge, viz., the speaker must be an *āpta*, a reliable person (see before).

What then are these 'possible' falsities ? How do they differ from the impossible ones ? For, to be sure, the tendency in Nyāya has been to push most of the so-called unactualized possibles, the flying horse or the rabbity horn, into the domain of the 'impossibles' (i.e., the incompatibles, *ayogya*). This leads to the discussion of the intricate problems of modal notions, which I wish to skip in this connection. There is, however, one easy way to distinguish the 'possibles' from the 'impossibles' in the Nyāya theory. If our ideal hearer would have an awareness, true or false, from the utterance concerned, then the combination (uttered) would be pushed into the domain of possibility. Truth or falsity would be determined in this theory by the speaker's qualifications, etc. Our ideal hearer may be ignorant whether the awareness that he has is a true one or a false one, unless and until he makes further investigations : he may check the speaker's qualifications, or the situation in which the supposed combination has been stated to be actual, or use some other means. So long as the awareness arises in him in the required fashion without any further investigation, we have to accept the said combination as belonging to the domain of the possibles. If, inspite of the utterance passing the test of proximity and syntactico-grammaticality, the required awareness does not arise in the way it has been described, then the combination would belong to the domain of the impossibles.

Some modern philosophers (e.g., W.V. Quine) have raised doubts about the intelligibility of the analytic-synthetic distinction. It has been argued that the criterion for a clearcut distinction cannot be formulated without involving one in circularity, and hence, it is a dogma of empiricism to maintain that the distinction is intelligible. If this is true, then, a consequence of it seems to be that a clearcut line of demarcation between the unactualized possibles and the impossibles would vanish, or would be ever-elusive. For, to be sure, what would be an

'impossible' combination in the Nyāya theory is a mirror-image of what would be, roughly, *analytically* false : "Bachelors are married." Arguments in the fashion of Quine can be given to show that the combinations, such as, the rabbity horn, sprinking with fire, the barren woman's son and the water-lake having fire, are all, strictly speaking, impossible, for, no satisfactory criterion can be formulated to show that some of them are 'possible,' while the others are not. The idea behind this is sometimes expressed by the claim of some modern Naiyāyikas that if horns started growing on rabbits, the new creatures would not be rabbits any more ! In fact, it has been reported that some rabbit-like creatures have been found with horns on them. Probably Nyāya would say that these are not rabbits but belong to a (slightly) different species.

In fact, Nyāya would contend that the domain of the unactualized possibles (presumably referred to by such 'possible' but unactual combinations of words) should be restricted to the domain of false possibilities. Being guided by various considerations, we do assume a lot of things and facts to be actual. Most of them, however, after further investigation and further consideration, turn out to be unactual, false. When even such initial assumption is not made by us even though we are confronted with some presumably grammatically combinable word-cluster, we have passed beyond the domain of the 'possibles' and hover now over the domain of the impossibles. 'A rabbity horn' would be an item of this kind. For, had we not been informed about rabbits in the way we are actually informed, or had we even been differently informed, we would have assumed the said combination to be a 'possible' one. And in that case, Nyāya would concede that an awareness would have arisen in us from the relevant utterance : the rabbit's horn.

I shall conclude with a few comments on the second problem : that of determining a fixed borderline between syntactic and grammatical acceptability and what may be called semantic acceptability. The issue is connected with the problem of defining grammaticality. The task of defining grammaticality is viewed by moderners as involving some intricate problems.[1] Indian philosophers sometimes discussed the issue about where the

[1]Lyons, J., *Introduction to Theoretical Linguistics*, Cambridge, 1968 p. 152.

domain of *ākāṅkṣā* ends and the notion of *yogyatā* takes over. For example, why, it may be asked, cannot the requirement of a liquid or water as an instrument for sprinkling or wetting the ground be a matter of *ākāṅkṣā*, instead of *yogyatā*? Some Navya-nyâya writers resolved the issue by saying that the concept of *yogyatā* 'possibility' should be restricted to the lack of such verbal contradiction or patent (analytical?) impossibility as is expressed in "What is without fire has fire" (cf., *nirvahnir vahni-mān*). Water as an instrument of sprinkling would be included in this view in the domain of *ākāṅkṣā*. If this is a step towards the right direction, it would support my attempt to connect *ākāṅkṣā* with syntax and grammaticality, and *yogyatā* with semantics.

We can reformulate the previous question and ask : where lies the line where syntax-and-grammar ends, and semantics takes over? In other words, why 'a noun must take a verb' or 'a transitive or object-taking (cf., *sa-karmaka*) verb must take an object-noun,' would be considered only syntactic requirements, while 'the verb *sprinkling* needs a liquid or watery substance as its instrument' and 'the verb *eating* needs somewhat solid food as its object' would be considered semantic requirements? Some-what in the manner of N. Chomsky (in *Aspects of the Theory of Syntax*), one can introduce sub-categorization of nouns and selection rules of verbs in the syntactic theory, and thereby the domain of syntax and grammar may be extended to include a lot of consideration which we ordinarily take to be semantic con-sideration. It may be noted that the Chomskian view (in *Aspects*) was that while syntax can take care of numerous problems which have been traditionally regarded as semantical, the notion of analyticity and contradictions are to be regarded as matters of semantics.[1]

The classification of grammatical elements and lexical items and the system of rules dealing with them can be made progres-sively more detailed and thereby the notion of grammaticality can be redefined. The general idea here is probably this : gram-maticality is, in the last analysis, to be defined by reference to a

1Chomsky, N. specially pp. 148-63. Chomsky concludes : "...the syntactic and semantic structure of natural languages evidently offers many mysteries, both of fact and of principle, and that any attempt to delimit the boundaries of these domains must be quite tentative." (p. 163).

particular system of rules, although it might not always be possible to formulate these rules explicitly and exhaustively. A string of words is grammatical (and *sākāṅkṣa*) if it is generated by such rules. But this idea may go against Chomsky, who would maintain that the notion of grammaticality is intuitively determined by the native speaker.

The Nyāya theory, according to the interpretation that has been suggested here, can be presented in the form of the following (inverted) tree-diagram :

S_1 = the set of word-clusters that generate the verbal knowledge passing all the four tests.

S_0 = the set of combinations that generate false awareness (the speaker is not *āpta*).

S_2 = the set of the possibles, acceptable grammatically and syntactically.

S_3 = the set of the impossibles, acceptable grammatically and syntactically.

S_4 = the set of those acceptable grammatically and syntactically

S_5 = the set of those unacceptable grammatically and syntactically.

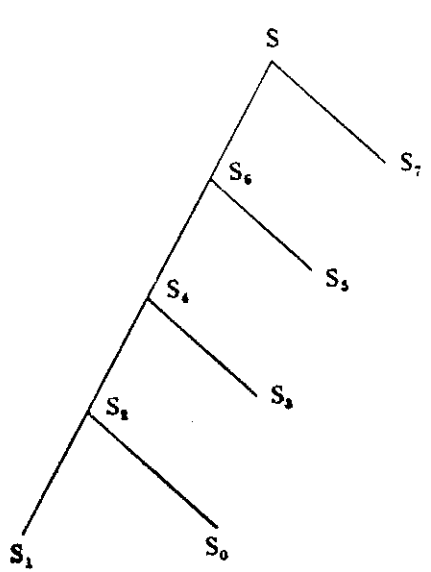


Diagram I

S_6 = the set of those that pass only the 'physical proximity' test.

S_7 = the set of those which fail even the "proximity' text.

S = the set of word-combinations of all forms.

The usual Nyāya discussion, however, does not envision such a rigid system or model. The traditionally understood model is more like something given below :

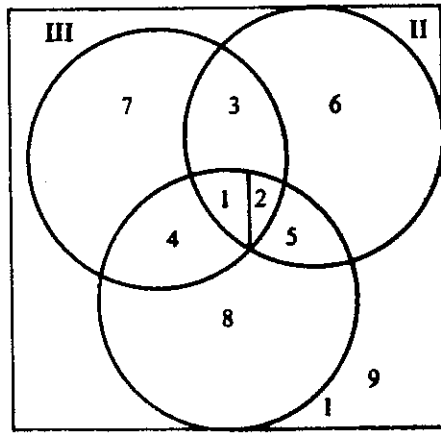


Diagram II

Here the nine regions should be interpreted as follows :

1 TRUE i.e., the set of those that generate knowledge in the ideal hearer. The speaker is *āpta*.

2 FALSE i.e., those that generate a (false) awareness. The speaker is not *āpta*.

3 Grammatical (syntactically acceptable) and Possible.

4 Possible and (physically) Proximate.

5 Grammatical (syntactically acceptable) and (physically) Proximate.

6 Grammatically (syntactically) acceptable.

7 Possible

8 Proximate (physically).

9 Non-proximate combinations, if any.

Circle I is for Proximity, Circle II for Grammaticality, and Circle III for Possibility.

The above way of conceiving grammaticality and meaningfulness may face two very common objections. First, we do meet a lot of grammatically incorrect expressions (e.g., a language-learner's first exercise in composition), of which we seem to understand the 'meaning'. These expressions will fail the test of *ākāṅkṣā*, according to our above model. Do we have a *śābda-bodha* in such cases ? Our answer would be that we do not have a verbal knowledge *directly* from the utterance in such cases. The incorrect expression reminds us (due to similarity, etc.) of the correct one, which then generates the required verbal knowledge.

Second, there are indeed numerous expressions in our language forming part of poetry, riddle, fiction and fantasy, where the so-called incompatible or impossible combinations do frequently occur. And we do seem to understand their meaning or significance. They do not pass the test of *yogyatā*, according to our above model. Do they generate *śābdabodha*? For, it cannot be denied that "sprinkling with fire" could be part of a metaphor or a poetic expression, and even "green ideas sleep furiously" may be a line of a so-called nonsense poem, or a riddle. In reply we must say that the notion of compatibility or possibility here is relative to the actual world we live in and the non-poetic everyday language. When we enter into the realm of fiction or the fantasy-world, such 'possibility' test will not be needed. For, the unactuals and the impossibles, the improbables, except, perhaps, the *properly* impossible one (such as, the same part of a wall being red and blue all over at the same momemt for the same observer in the same sense), can form part of the furniture of our fantasy-world, or some suitably chosen 'possible' world. We can even perceive them in dreams, and communicate them in language or through some other media, paintings (illustrations of "puzzle" paintings are nuemrous). However, the fantasy-world is founded necessarily upon the actual world, and the non-actuals can shade off gradually from the possibles to the impossibles; we can understand such expressions only when we cast sidelong glances towards the actual world. We understand something to be impossible, because we understand what could have been or is possible; and we understand the possibles, because we understand the actual. It cannot be the other way round.