

# Roles of Nominals in Construing Meaning at the Level of Discourse

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## Abstract

Construction of meaning at the level of discourse involves complex procedures. Exploring this process reveals the hidden complexities of linguistic cognition. This paper mainly tries to unpack one such complexity in this paper. It attempts to answer the way complex and often metaphorical usages are construed in language with a special reference to the language data drawn from *Bangla* emphasizing the way nominals behave in language. In doing so, we have adopted a model proposed by Karmakar and Kasturirangan (2011) to explain the process of conceptual blending. We have also tried to push the boundary a little behind by incorporating few mathematical assumptions.

## 1 Introduction

As per the thesis of compositionality as is endorsed in the school of logical positivism, the meaning of a complex expression is the totality of its constituent parts and the way they are combined together into a structural whole. However, in contrary, it is often noticed that the meaning of whole is always more than the meaning of the totality of its constituents: This is primarily because of the reason that not all of the inferential tasks involved in meaning construction are realized explicitly in a communicative event. Therefore, the major challenge to interpret meaning construction at the level of discourse is to construct an account of implicit and explicit inferences and the way they are combined together into a coherent whole. In doing so, researchers have primarily tried to concentrate on the semantic-pragmatic behavior of the verbs; however it is hardly possible to come up with a theoretical solution to the problem of meaning construction

simply by overlooking the roles of other syntactic categories (Pustejovsky, 1995).

### 1.1 Defining the research problem

Because of being motivated by the compositionality principle, most of the approaches in logical positivism tradition reduce the problem of meaning construction into the mere problem of combinatoriality under the assumption that semantic design is homomorphic to the syntactic design. Consider example (1):

1. The boy enters the house

a. Syntactic Template:

[S[NP[art ] [N ]] [VP[V ] [NP[art ] [N ]]]]

b. Semantic Template:

[Event GO([Thing ], [Path TO([Place IN([Thing ])])])]

Establishing one-to-one correspondence between the two templates stated in (1a) and (1b) above seems to be the most pressing problem in this stage of research. In comparison to (1a), (1b) contains several conceptual components which are not explicitly realized in the syntactic level, for example (1a) lacks syntactic equivalences for the semantic constituents like PATH and PLACE. Why is it so? – One probable answer to this kind of mismatch comes from the fact that unlike syntax conceptual representation involves different types of meaning relations. In fact the conceptual structure represented in (1b) is actually the semantic representation of ‘the boy went into the house’ – the sentence which is entailed by (1).

2. The boy enters the house

→ The boy goes into the house

However, this is not the end of the story. In reality, the comprehension of (1) presupposes a whole

lot of information without which (1) will hardly make any sense. The semantics of *house*, as per our statement, stands in some congruity with the semantics of verb *enter* in virtue of having a sense of enclosure. More explicitly, the semantics of *enter* expects or presupposes a location which is enclosed.

These theoretical solutions are often considered as problematic primarily because of the reason that they have very little scope to incorporate various types of entailment and presupposition involved with a particular articulation. For example, (1) involved following types of inferences:

3. a. A living being enters into the room.
- b. A living being goes into an enclosed space.
- c. The enclosed space has an entrance.
- d. Entering-act ends inside the enclosed space.
- e. etc.

Syntactic and semantic representations of (1) fail to capture these detailing. Capturing these detailing seeks to develop a theoretical framework where linguistic expressions can control the inflow of common sense knowledge more efficiently. In doing so, one needs to put equal emphasis on all syntactic categories. Under this situation, present work seeks to model the functions of nominal at the level of discourse in construing meaning. To do so, we need to understand how nominal differs as well as resembles verb.

### 1.1.1 The Nature of Nominals

There are several remarkable differences between nominal and verbal predicates in the level of meaning construction. Firstly, a close analysis of a text will demonstrate that the number of nominal predicates is much larger than the number of verbs. For example in 1 we can see the number of nominals is two in contrast to the number of verbs which is one. Secondly, According to Geach (1962) and Gupta (1980) nominals are like intransitive verbs within the theoretical framework of predicate logic. This can even be noticed in the semantic interpretation 1, following Jackendoff's proposal (1995). The intransitive verb like behavior of nominals will become much clear in the following logical translation of 1:

$$4. \exists x \exists y (\text{BOY}(x) \wedge \text{HOUSE}(y) \wedge \text{ENTER}(x,y))$$

From 4, it is possible to show that the nominals like *boy*, *house* etc. is behaving much like the one place predicates which can take single argument in contrast to the transitive predicate like *enter*. Finally, compared with a verb predicate, a nominal predicate tends to have fewer explicit and more implicit arguments that are not explicitly stated in the current sentence but can be recovered in a larger context (Gerber and Chai 2010). This claim is illustrated in 5.

5. a. ENTER:

[X]<sub>explicit-argument</sub> enters [Y]<sub>explicit-argument</sub> through [Z]<sub>implicit-argument</sub>

b. BOY:

[living\_being, has\_the\_ability\_of\_moving, etc.]<sub>implicit-arguments</sub>

c. HOUSE:

[enclosed\_space, has\_entrance, etc.]<sub>implicit-argument</sub>

More the number of implicit arguments more informative the expression is. In fact, what amount of inferential task is involved in the unpacking of a particular utterance is largely determined by the fact how many implicit arguments the utterance has with it.

## 2 Theoretical Framework

Karmakar and Kasturirangan (2011) conceive a linguistic expression as a mental regulation consisting of intending function (= I<sub>p</sub>) and contending function (= C<sub>p</sub>). The intending function basically invokes the relevant conceptual category. A conceptual category indicates a systematic representation of interrelated knowledge systems (Laurence & Margolis, 1999; Aarts, 2006). For our study, a conceptual category is rather conceived as a cognitive capacitance, which stores all possible perspectives of a phenomenon (Merleau-Ponty, 1945/2002; Millikan, 2004). By definition we can say that a cognitive capacitance is a category, which is useful in presupposing and entailing large numbers of facts associated with it, because on activation it illuminates a cluster of other categories with which it is associated (Givon, 2005). However, intending alone is not enough to language a discourse, since linguistic communication is always context dependent. We need another cognitive function, whose role is to situate conceptual categories in that context (Zilberman,

1938/1988; Langacker, 2008). We call this act of relativization *contending*. The function of a linguistic expression, while contending, is to choose a particular perspective in a discourse context. For example if we consider the expression ‘*rose*’, we will see that the act of intending, associated with ‘*rose*’ invokes the corresponding category which includes information about its structural aspects (like shape, size, constituencies etc.) and at the same time it also indicates the functional aspects (like symbol of love, friendship, peace etc.). From these two examples we can say that it is the communicative situation that will determine the selection of these structural and functional aspects.

In addition to this, we also want to argue that meaning construction can at best be conceived as the composition of intending and contending functions as is illustrated in 6 below with a provision for an intermediating domain essential for meaning transference:

$$6. C_f \circ I_f =_{def} \{(x, z): \text{for some } y, (x,y) \in I_f \ \& \ (y,z) \in C_f; \text{ where } x \in \text{Domain}(I_f) \ \& \ z \in \text{Range}(C_f)\}$$

What seems to be of most interesting is the fact that composition of two functions leading towards the emergence of a third meaning presupposes the provision for an intermediating value commonly shared by both functions for successful meaning transference. While observing the similar phenomenon, Goguen (2006) suggests that this type of shared underlying substrates are significant since they do allow the cognizer to predict what else is being inherited in due course of forming the composition. The provision for intermediating value in construing the underlying substrate constitutes that frame of reference with respect to which the composed-meaning-space is interpreted.

So having discussed about these functions, we can say that meanings of the expressions (here, it is nominals) are not always the prepared items stored in a context; rather it is a product that we built and rebuilt on each time. The meaning construing capacities of nominals, as Karmakar and Kasturirangan (2010a,b) argues, in a discourse is determined by the way underlying domains of our cognition are grounded and situated by the respective functions associated with an expression – i.e. intending and contending. This way of grounding

and situating is what we call the *conceptual route* that a cognizer follows - though intuitively - in order to access the communicative intent. In fact, study of the conceptual route is an effort to explore the way conceptualization processes are structured.

### 3 Text Analysis

The claims that we have made till now, will further be justified through an analysis of a text. The following report is randomly selected from a Bengali news paper, Ananda Bazar Patrika, (dated 3<sup>rd</sup> February 2014):

- 7.
- a. *joRa*      *baunsar*  
double      bouncer  
Double bouncer.
- b. *ete*      *OboSSo*      *bharotio*      *krikeT*      *dOl-er*  
in this      however      Indian      cricket      team-of  
*moto*      *Sue*      *pOReni*      *bharotio*      *Orthoniti*  
like      lay down      fall-past-neg      Indian      economics  
*tOtha*      *deS-er*      *dui*      *prodhan*      *Sear SuchOk*  
means      country-of      two      main      share index  
However, like the Indian cricket team, Indian Economy – means two main share indices of the country – has not laid down.

The close analysis of the text indicates two different conceptual routes: (1) the *addresser’s* perspective and (2) the *addressee’s* perspective. From the beginning of this report it is quite clear that *addressee*, as *addresser’s* target, is not the economic scholars rather the common people of this country. By using the nominal word ‘*baunsar*’ (bouncer) the addresser is basically arresting reader’s attention. The conceptual category ‘*baunsar*’ (bouncer) has an inbuilt orientation.

With the incorporation of the words like *baunsar* (= bouncer), *krikeT dOl* (= cricket team) in the above mentioned narrative, the speaker establishes the domain knowledge of game (here, cricket) as the pretext for the better performance of Indian economy during a particular point of time. More importantly, picturing the better performance of Indian economy as against the poor performance of Indian Cricket team attributes a sense of prominence to this story, in spite of the fact that domain knowledge of game shares very few information about the domain knowledge of economy. However, superimposition of these two domains of knowledge switches on various connections which

remain nascent in this articulation. One such network of connections results into a kind of convolution (in a mathematical sense, if permitted), creating a third sense of ‘competition’ which may or may not have any connections with either of the domains of knowledge as is mentioned above.

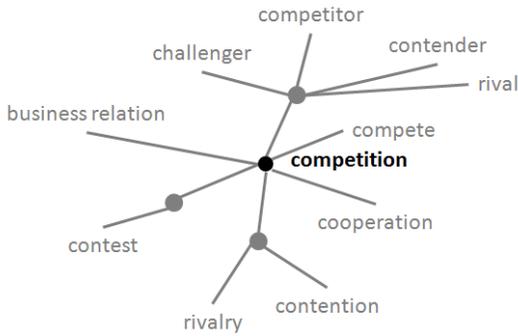


Figure 1

This convoluted sense of competition which is not apparent in 6, again, brings with it a baggage of information which definitely increases the richness of the information. The term convolution is used here in the following sense:

8. a. A convolution is an integral that expresses the amount of overlap of one function  $I_f$  as it is shifted over another function  $C_f$ . It, therefore, "blends" one function to another. A more formal representation is given below:

$$b. (C_f * I_f)(D) =_{def} \int C_f(\tau) I_f(D - \tau) d\tau, \text{ where } \tau \text{ is the time dependent variables and } D \text{ is domain emerges due to the convolution}$$

Significance of 8 lies with the terms like ‘overlap’ and ‘blends’: In continuation of our discussion on 6, we can further argue that  $\tau$  as the contingent element constitute the frame of reference with respect to which the interpretation of newly evolved  $D$  is being done. More specifically, construction of  $D$  is dependent primarily on the integration of time dependent  $\tau$ -contention and time independent intention represented as  $(D - \tau)$ .

Clearly, certain aspects of the background knowledge involved in increasing the richness of the information is taken care of by the semantics of the word which is time independent and some other

aspect is taken care of by the time dependent pragmatics. Taken together these two aspects explains the meaning construction process of 6; or, in other word, determines the emergence of  $D$ .

A time dependent construal, here in this case the performance of Indian Cricket Team, is often picked up by the speaker not only to make the information rich but also to convey the message more effectively and efficiently. The time dependent aspect of  $D$ , then, should fall within the scope of contending; whereas the time independent aspect is taken care of by the intending function.

#### 4. Discussion

The concept of blending, here, seems to be the most important one. Though in 7, we have shown blending of two major domains of knowledge, (namely the domain of cricket game and the domain of Indian economics,) a little attention will reveal the fact that the interpretation of 7 requires other instances of blending also. One such instance is *dOl* which corresponds with the concept of team, party etc. However, when it appears in the vicinity of cricket its intended sense is being coerced by the concept of cricket game. Similarly, cricket in isolation may intend several things but in conjunction with *dOl*, it results into a particular sense. Same situation can also be noticed in case of *sear* ‘share’ and *suchOk* ‘index’. Therefore, what can at most be suggested that meaning in a discourse is a consequence of both invoking the default schemes of our thoughts and also combined them into some integral domain which may further transformed into a newer integral domain depending on the fact if newer information is being brought into the discussion. However what needs to be emphasized is the fact that the emerged meaning coexist with the original meaning relations out of which the former one arises under the direct influence of the context. A similar claim is also made in Guhe *et al.* (2011).

One way to deal with the formation of integral domain is to employ the concept of Cartesian product over a non-empty set of typed-concepts with restrictions. Under this assertion, then a blended type will be considered as the ordered pair. Lets unpack this assertion with a special reference a phrase *share index* whose Bangla correspondence is *sear suchOk*. Concept of *share* is

connected with several other concepts as is shown in the following diagram:

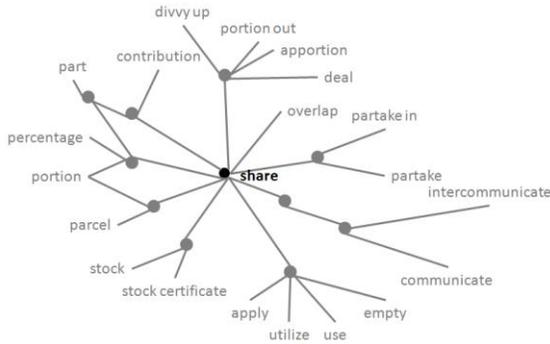


Figure 2

Same is also the case with the concept of *index*:

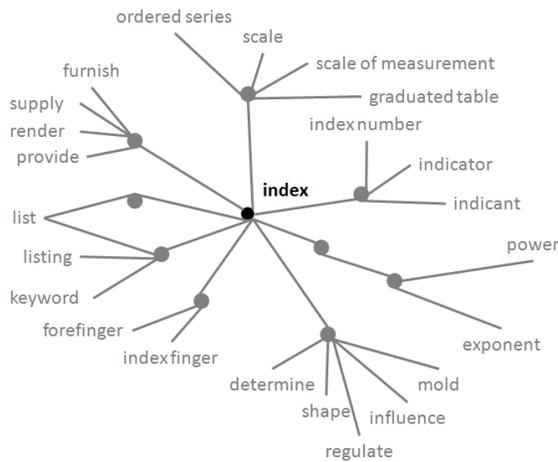


Figure 3

However, when they are combined together through the act of intending and contending, they results into a third domain of conceptual connections. Here, in this context, an indicative representation of *share index* is given in Figure 4.

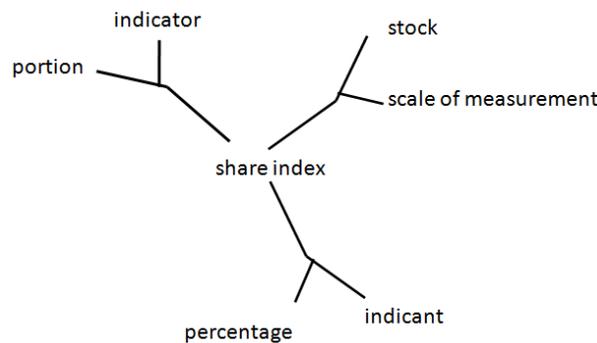


Figure 4

But, how does this fit into the theoretical framework which we have discussed above? – What remains common to both *share* and *index* is a *sense of measure*, however with some difference: When *index* is directly connected with the sense of measurement, *share* is indirectly connected to the sense of measuring. More specifically, *share* is connected to the sense of measurement only in virtue of being connected with the concepts like *portion*, *percentage* etc. Under this situation, sense of measurement is picked up as the  $\tau$ -component to blend the conceptual spaces of *share* ( $= I_f(\text{share})$ ) and *index* ( $= I_f(\text{index})$ ) into the blended-space of *share index* ( $= D$ ) where the sense of measurement is the dominant one. Picking up of  $\tau$ -component to blend the conceptual spaces is what we have named as contending in our proposal.

Within the broader theoretical scope, then, a concept (both, simple and the complex, like *share*, *index*, and *share index*) can be visualized as a integral domain consisting of (i) a non-empty set of concepts it is associated with, and (ii) two binary operations called intending and contending.

## 5 Conclusion

This paper deals with the way concepts are integrated in a text. In dealing with this issue, we have concentrated on the nominals primarily. While developing our previous position on this issue, we have argued further that the issues in metaphorical meaning can be successfully explained with the help of some mathematical notions like convolution, integral domain etc.

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