

## Constraint governing the Composition of Compound Verb spelled out on the Typed Feature Structure Representation of Indo-Aryan Verbs

I postulate a constraint-based mechanism for constructing Indo-Aryan Compound Verbs. The design of the constraint heavily relies on a model in which the syntactic and semantic description of verbs is represented as typed feature structure within a system multiple inheritance hierarchy. This paper highlights the advantage of modeling the lexical description of verbs in terms of typed feature structure which spells out the constraint of unifying two verbs to form a compound verb in Indo-Aryan languages. structure.

Compound verb (henceforth CV) is a two-member construction in which the first member (V1) is either a root (as in Hindi<sup>1</sup>) or a participial form as in Bangla<sup>2</sup>, Orya and Assamese, for example; and the second member (V2<sup>3</sup>) bears the inflection:

Bangla: 1a. *pakhi-ṭa uṛ-e gæ-l-o*                      Hindi: b. *pānchii uṛ gə-ii*  
bird-classifier fly-cp go-3 pt                      bird fly go-3pt  
'The bird flew away'                                      'The bird flew away'

V2s are selected from a closed set of verbs. They not as completely grammaticalized<sup>4</sup> as the auxiliaries; in other words, they are not semantically empty. The two Vs must be semantically compatible in order for them to unify and form a CV. For example, the V2 *deoa* 'give' adds the semantic restriction that the action denoted by the resultant CV implies non-self directionality:

2a. *ritu rōma-ke uil-ṭa poṛe di-lo*  
ritu Ramma-dat will-the read-cp give-3 pt  
'Ritu read the will for Ramaa'

Here the actor does something for the benefit of others. *rōmake* 'to Ramaa' in (2) cannot be substituted for *nijeke* 'self' to mean 'I bought a sari for myself' as in (2b):

2b. *\*ami nijeke ækṭa Sari kin-e di-l-am*  
I self one saree buy give-3 pt

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<sup>1</sup> Hindi, another Indo-Aryan language, spoken widely in northern region of India

<sup>2</sup> Bangla is an Indo-Aryan language spoken widely in Bangladesh and West Bengal, an Eastern state of India

<sup>3</sup> The V2 has been variously named as *vector*, *light verb*, *auxiliary* and *explicator* in the literature. This paper refers the member verbs simply as V1 and V2 and assumes that V2s are not semantically empty.

<sup>4</sup> Grammaticalization entails a stripping off of the main dictionary meaning from the vector verb in order to reduce them to the role of 'aspective'. Butt (1995) argues that the case marking on the subject of the compound verb in Hindi-Urdu is a direct consequence of semantic information, such as conscious choice and inception/completion, which is contributed by the V2

V2 *deoa* ‘give’ does not similarly unify with verbs such as *jana* ‘know’, *bhaba* ‘think’, *Sekha* ‘learn’ whose meaning entails self-directionality.

Since the selection of a V2 by a V1 is largely determined at the level of semantics the constraint regulating the unification of the two Vs is defined on the semantic types of the verbs.

This paper postulates a number of *semantic types* each of them being a linguistic representation of some event or state. Semantic types are represented as typed feature structure each of them having a defined set of features which contains a set of proto-role attributes (Dowty 1991). Every proto-role attribute is associated with a set of proto-role entailments. The value of a proto-role attribute denotes an entity that plays<sup>5</sup> a certain participant role in the denoted situation. This closely follows the system of lexical semantic representation that Davis (2001) has proposed. Each semantic type subsumes the meaning component of a set of V1s and V2. I have chosen to encode those semantic properties within the semantic structure of V1s that will ensure the right kind of selection of V2s by these verbs.

The constraint governing the unification of V1 and V2 states that the semantic value of V1 and V2 must be token identical. The token identity implies that the semantic types of V1 and V2 must be consistent. This is possible only when the semantic type representing one V participant is a subtype of the other or the two semantic types have a common subtype in the hierarchy of the semantic types. The paper will show how the constraint is specified on the lexical description of the verb lexeme and a miniature of hierarchy of semantic types will also be presented to illustrate the semantic constraint that governs the unification.

## Reference

- Carpenter, R. (1992) *The Logic of Typed Feature Structures*, (Tracts in Theoretical Computer Science). Cambridge University Press, Cambridge.
- Davis, Anthony R. (2001) *Linking by Types in the Hierarchical Lexicon*. CSLI publications, Stanford, CA.
- Dowty, David (1991) “Thematic Proto-roles and argument selection.” *Language*, 67:3, 547-619.

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<sup>5</sup> Playing that role implies that at least one proto-role entailment associated with that attribute holds of that entity by virtue of its participation in the situation.