

Semantic Grammars; On how meaning is captured by language

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1. Finding the commonality between Chomskian Grammars and Relational Data Models

To me, meaning is a quite illusive concept that I have been persuing for some time now. The information on this page documents yet another angle I cherish in pursuit of this illusive lady.

The reason for this page is to remind me that I have to write an article on the meaning captured by a Chomskian Phrase Structure Grammar as said meaning can be expressed in terms of the relational model as introduced by E.F. Codd.

To my mind it seems that there *must* exists a reasonably straight-forward correspondence between the grammatical abstractions such as terminal and nonterminal symbols and production rules, and relational concepts such as entities, weak entities, attributive relations, and associative relations.

From each data model a set of phrase structure grammars capturing the meaning expressed in the datamodel in a syntactic form, is derivable. Conversely, each phrase structure grammar, captures the semantics of some data model in syntactic form.

2. A first approcimation

The following table gave a first approximation of the correspondences between relational concepts and concepts found in phrase structure grammars.

| Relational Concept | Grammatical Concept |
|--|--|
| Relational Table | Single nonterminal on left hand side a production rule |
| Cartesian Product of Relations | Left hand side of context sensitive production rule |
| Relational Attribute | Terminal on right hand side a production rule |
| Child attributes of Foreign Key Relationship | Nonterminal on right hand side a production rule |

Of course this first approximation does do justice to this topic regrettably I don't have time to pursue this further at the moment. Please feel free to do so if you have the inclination...