Complex predicates and the functional sequence

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Abstract

In this paper I argue that a fine-grained functional hierarchy of semantically contentful categories such as Tense, Aspect, Initiation, and Process has explanatory power in understanding the crosslinguistic distribution of complex predicates. Complex predicates may involve adjunction, control, or raising, and show other variables as well. In a Minimalist framework, specific parameters cannot be invoked to allow or disallow different kinds of serial verbs, light verbs, resultatives, and so on. Instead, what variation is observed must come from the specifications of lexical items. This places a great burden on the learner, a burden which, I argue, is partly alleviated by the functional sequence.

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A predicate is a sentence that contains one or more variables and becomes a proposition when specific values are substituted for the variables. The domain of a predicate variable consists of all values that may be substituted in place of the variable. Let P(x) be a predicate and D the domain of x. A universal proposition is a statement of the form: ∀x in D, P(x).

Goal: To introduce the concept of a function, the notion of one-to-one functions, onto functions, and the floor and ceiling functions.

2.3.1 Function. A function (mapping or transformation) f : A → B is a relation from a set A (called domain) to a set B (called codomain), such that to each x ∈ A, exactly one y ∈ B is assigned. Thus the function f is a subset of A × B. 2.3.2 Graph of a function.

Predicates and Functions. Predicates in MiniZinc allow us to capture complex constraints of our model in a succinct way. Predicates in MiniZinc are used to model with both predefined global constraints, and to capture and define new complex constraints by the modeller. Functions are used in MiniZinc to capture common structures of models. Indeed a predicate is just a function with output type var bool.

2.3.1. Global Constraints. There are many global constraints defined in MiniZinc for use in modelling. The regular constraint is used to enforce that a sequence of variables takes a value defined by a finite automaton. The usage of regular has the form: regular(array[int] of var int: x, int: Q, int: S, array[int,int] of int: d, int: q0, set of int: F).

A complex predicate is a multi-word predicate (see Section 9, "Multi-word predicates") consisting of a semantically empty verb which expresses the grammatical meanings in a sentence, and a noun (frequently denoting an event or a state of affairs) which carries the main lexical meaning of the entire phrase. A complex predicate forms a single complex lexical unit for which an appropriate synonymous expression can usually be found in the form of a one-word predicate. Cf.: one-word predicate → complex predicate.