

Demonstration of an HPSG grammar where the argument structure is composed in the syntax

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In the grammar that I have developed as a part of my PhD (Phdgram), I assume that argument structure can be divided into five subparts, and that syntactic items such as grammar rules, function words and inflections, realize these argument structure subparts. The five subparts correspond to well-known linguistic notions such as external argument, deep direct object, deep indirect object, predicative and oblique. By directly associating these roles with syntactic entities, it is possible to have open class lexical items which are totally underspecified with regard to argument structure, and still only generate syntactically grammatical sentences. The verb *drip* can be used as an example. The examples in (1) illustrate the different frames that the verb can enter. Each sentence in (1) is associated with a particular constellation of argument structure subparts. (1a) has an external argument role only. (1b) has an external argument role and a predicative. (1c) has an external argument role and an oblique. The longest example (1k) has all the five roles (external argument, deep indirect object, deep direct object, predicative and oblique). (1n) has none of the roles. The syntax is constrained in such a way that only (syntactically) grammatical sentences can be generated.

- (1) a. The roof drips.
b. The doctor drips into the eyes.
c. The doctor drips with water.
d. The doctor drips into the eyes with water.
e. The roof drips water.
f. The roof drips water into the bucket.
g. The doctor dripped the eyes with water.
h. The doctor dripped into the eyes with water.
i. John dripped himself two drops of water.
j. John dripped himself two drops of water into the eyes.
k. John dripped himself two drops of water into the eyes with a drop counter.
l. Water dripped.
m. Water dripped into the bucket.
n. It drips.

In a strict lexicalist setting, there would be a distinct lexical entry for each of the argument frames in (1). Alternatively, one particular frame would be assumed to be the base lexical entry, and then all the others would be derived from it by means of lexical rules. In the constructional approach, verbs like *drip*, that are underspecified for argument structure information, are the default. Other verbs, that only allow one or a few argument frames, have to be constrained accordingly.

The syntactic items that realize argument structure subparts are syntactic rules, inflectional rules (passive morphology and clitics) and function words (infinitival markers and the passive auxiliary).

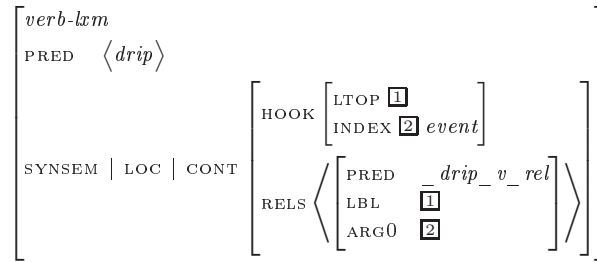


Figure 1: Lexical entry for *drip*

The syntactic items that realize the argument structure subparts introduce Parson-style semantic relations which link the predicate to the realized arguments. In this way, a verb like *drip* only needs to have the predicate and the event index in its lexical specification (see Figure 1). The argument roles are added as the syntactic items apply. The semantic representation of a transitive sentence with *drip* as in (1e) is given in Figure 2. The decomposed argument relations (*arg1_rel* and *arg2_rel*) hook up to the predicate relation via the LBL values (h1).

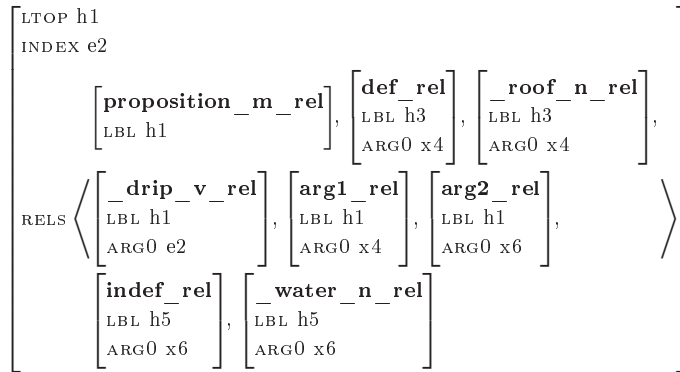


Figure 2: RMRS of *The roof drips water*