

extension of their syntax.

A well-defined syntax is not necessarily very user-friendly. For instance, the RDF/XML syntax is notoriously hard for people to read. However, this drawback is not very significant because most ontology engineers will use specialized ontology development tools, rather than a text editor, for building ontologies.

4.2.2 Formal Semantics

A *formal semantics* describes the meaning of a language precisely. *Precisely* means that the semantics does not refer to subjective intuitions, nor is it open to different interpretations by different people (or machines). The importance of a formal semantics is well-established in the domain of mathematical logic, for instance.

The combination of formal semantics with a well-defined syntax allows us to *interpret* sentences expressed using the syntax: we now *know* what is meant by the sentence. Formal semantics also allows us to reason about the knowledge expressed in the sentences. For instance, the formal semantics of RDFS allows us to reason about *class membership*. Given:

```
:x rdf:type      :C .
:C rdfs:subClassOf :D .
```

we can infer that `:x` is an instance of `:D`. The `rdfs:domain` and `rdfs:range` properties allow similar inferences:

```
:p rdfs:range    :D .
:x :p            :y .
```

allows us to infer that `:y rdf:type :D`.