OWL Full
OWL DL
Compatibility

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OWL/RDF interoperability with RDF

- E.g. sub property chains, for dc:creator
  - eg:author · eg:name → eg:authorName
- RDF semantics defined at triple level,
- Small bits of OWL implemented on top of RDF triples with simple rule engines

- OWL DL is a description logic, somehow superimposed on top of triples
- But we want to have 'least surprise' inter-op for people between these two very different uses.

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OWL/RDF interoperability with RDF

- Least surprise for users moving between RDF-like examples, and OWL DL examples

- Interop, for example, for annotations, where the usage in DL systems seems more RDF-like

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RDF semantics

- Semantics is defined triple-by-triple (essentially by predicate)

- Every triple refers to something in domain-of-discourse

OWL Full semantics

- Semantics is defined triple-by-triple (essentially by predicate)

- Lots of predefined things in domain-of-discourse: the comprehension principles

- Known to be unimplementable in its entirety

- More an umbrella covering lots of different possibilities, and constraining differences, rather than prohibiting difference

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OWL Full & OWL DL semantics

- Correspondences claimed in OWL S&AS, with sketch proofs

- OWL Full not known to be consistent

- Dave Turner (HP) did machine version of OWL S&AS proof; we failed to show that OWL Full is or is not consistent.

Issues

- 63: define OWL Full Semantics
- 67, 81: reification
- 69: punning
- 72: annotation semantics
- 55: owl:class vs rdfs:class
- 73: infinity
- Semantic subsetting for fragments
- Mapping rules ….

Reification

- Perhaps should have been dropped from RDF 2004

- Poor RDF semantics

- Doesn't do what you might think

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Punning

- Weaker than in OWL Full, which follows web architecture in having single meaning for each URI
- Seems to create user confusion
- In some cases (e.g. cardinality restrictions), the semantics differs, not just weaker

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Mapping rules

- In 2004 specs, mapping rules have very subtle effect to ensure that the correspondence theorems hold
- The mapping rules were tweaked right up until the end

- The drivers behind the current OWL 1.1 mapping rules were very different …. (e.g. round tripping, a particular view of backward compatibility, and without OWL 1.1 Full semantics we can't see how much we lose)

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