RDFS-plus
OWL

• Web Ontology Language

*Why not be inconsistent in at least one aspect of a language which is all about consistency?*

—Guus Schreiber, *Why OWL and not WOL?*
Try an inverse

Using inverse to extend OWL

Asserted:

:possessedBy owl:inverseOf :hasPossession.
:signedTo owl:inverseOf :signedOut.
:lentTo owl:inverseOf :borrows.

Want to infer:

:hasPossession owl:inverseOf :possessedBy.
:signedOut owl:inverseOf :signedTo.
:borrows owl:inverseOf :lentTo.

Solution:

Transitive

\[ P \text{ rdf:type owl:TransitiveProperty}. \]

The meaning of this is given by a somewhat more elaborate rule than we have seen so far in this chapter. Namely, if we have two triples of the form

\[
\begin{align*}
X & \rightarrow Y, \\
Y & \rightarrow Z,
\end{align*}
\]

then we can infer that

\[ X \rightarrow Z. \]

Notice that there is no need for even more elaborate rules like

\[
\begin{align*}
A & \rightarrow B, \\
B & \rightarrow C, \\
C & \rightarrow D,
\end{align*}
\]

implies

\[ A \rightarrow D. \]