7.5.3 Structural Methods

Since ontologies have internal structure, it makes sense to exploit the graph structure of the source and target ontologies and try to determine similarities between these structures, often in coordination with some of the other methods. If a source concept and a target concept have similar linguistic labels, then the dissimilarity of their graph neighborhoods could be used to detect homonym problems where purely linguistic methods would falsely declare a potential mapping.

7.5.4 Logical Methods

The methods that are perhaps most specific to mapping *ontologies* are the logical methods. After all, ontologies are, as defined by R. Studer, "*formal specifications* of a shared conceptualization," and it makes sense to exploit this formalization of both source and target structures. A serious limitation of this approach is that many practical ontologies are semantically rather lightweight and thus do not carry much logical formalism with them.

7.5.5 Mapping Implementations

There are several frameworks for ontology mapping such as the R2R Framework[20] and LIMES.[21] The service sameas.org collects and exposes owl:sameAs mappings from several different sources. While these projects have made great strides in creating mappings, this is still a challenging area. The research community has run the Ontology Alignment Evaluation Initiative[22] for the past nine years to encourage the creation of more accurate and comprehensive mappings.

[20] http://www4.wiwiss.fu-berlin.de/bizer/r2r/.
[21] http://aksw.org/Projects/LIMES?v=z1l.
[22] See http://oaei.ontologymatching.org/.