the reason for being “chronic” findings—despite this is indicated in their label.

1. ?c:CLASS, ?x:CONSTANT=MATCH(".Chronic.*")
SELECT ?c.IRI label ?x
WHERE FAIL ?c subClassOf RoleGroup some
  ('Clinical course (attribute)' some 'Chronic (qualifier value)')
BEGIN ADD ?c subClassOf ChronicIncompleteCandidates
END;

2. ?c:CLASS, ?x:CONSTANT=MATCH(".*chronic.*")
SELECT ?c.IRI label ?x
WHERE FAIL ?c subClassOf RoleGroup some
  ('Clinical course (attribute)' some 'Chronic (qualifier value)')
BEGIN ADD ?c subClassOf ChronicIncompleteCandidates
END;

Figure 17: OPPL scripts for gathering chronic classes with incomplete description.

Comparing the results of the manual analysis using OPPL scripts with the results of the automatic analysis by RIO we can note that the analysis with RIO gave in total 314 classes (table 4) as potential deviations from the expected pattern while manual OPPL scripts narrowed this down to 131 candidate classes. The reason for this difference is that OPPL scripts take into account both the asserted and the inferred form of the ontology, thus the instantiation of the expected pattern is in the inferences of the ontology. However, this kind of semantic analysis could not be done by RIO since we have a purely syntactic approach. It should be mentioned, though, that the 131 candidate classes from the OPPL script included all these classes in figure 15. Similar OPPL scripts gave 147 “acute”, 9 “present” and 2 “absent” candidate classes with missing descriptions.

Conclusions and future work
We have presented a refinement of RIO [16]; a framework that detects syntactic regularities in an ontology using cluster analysis, and applied it to three modules from SNOMED-CT. In particular, we have presented a different transformation function for the calculation of the distance that is used for the clustering. This transformation function finds optimal representations of entities by placeholders according to structural differences in axioms. The framework allows the use of different transformation functions, without affecting