

ADEMS, an ADaptable and Extensible Mediation Service application to biological sources

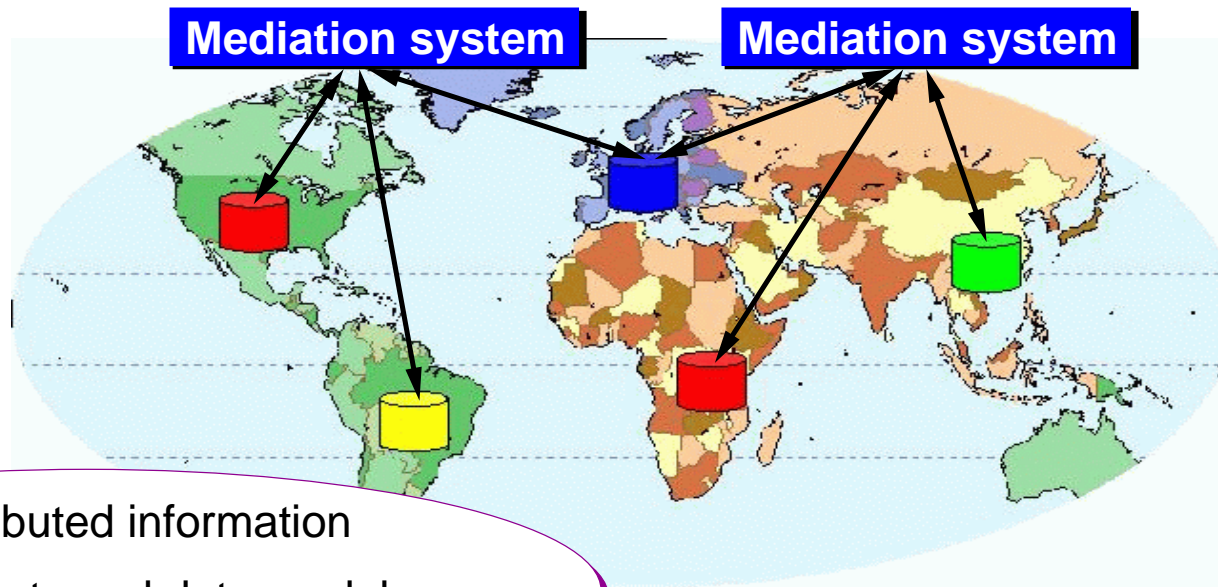
Gennaro BRUNO
LSR-IMAG
University of Grenoble, France

Supervisors : Prof. Christine Collet, Dr. Genoveva Vargas-Solar

Motivation and Objective

Single access point to sources
Global schema and query language
Local sources transparency

Human driven static process
Lack of scalability in evolving systems
Low flexibility

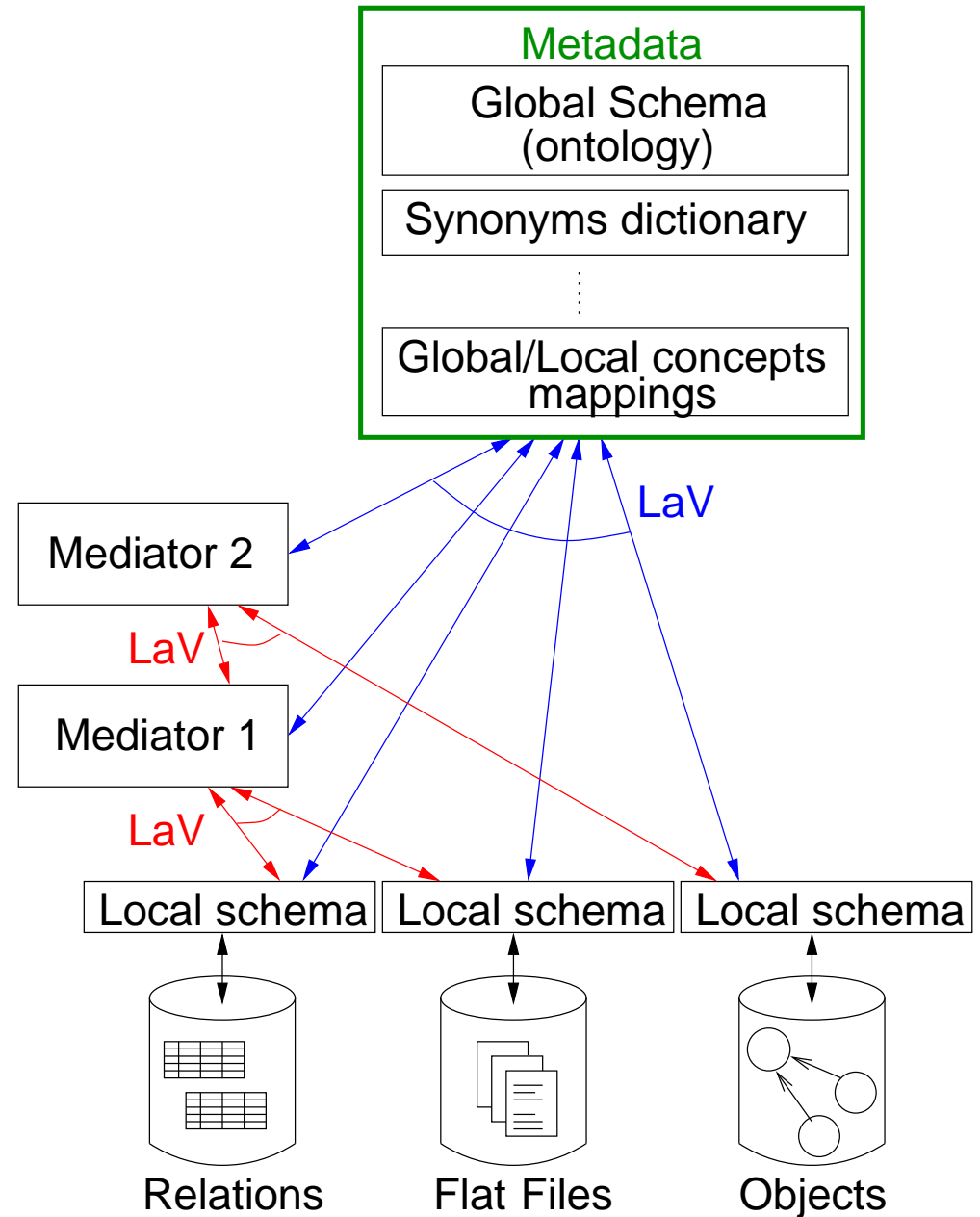


Highly distributed information
Different formats and data models
Different query languages

A generic framework for generating and configuring mediation systems well-adapted to specific application needs

"Two-Layer LaV" Approach

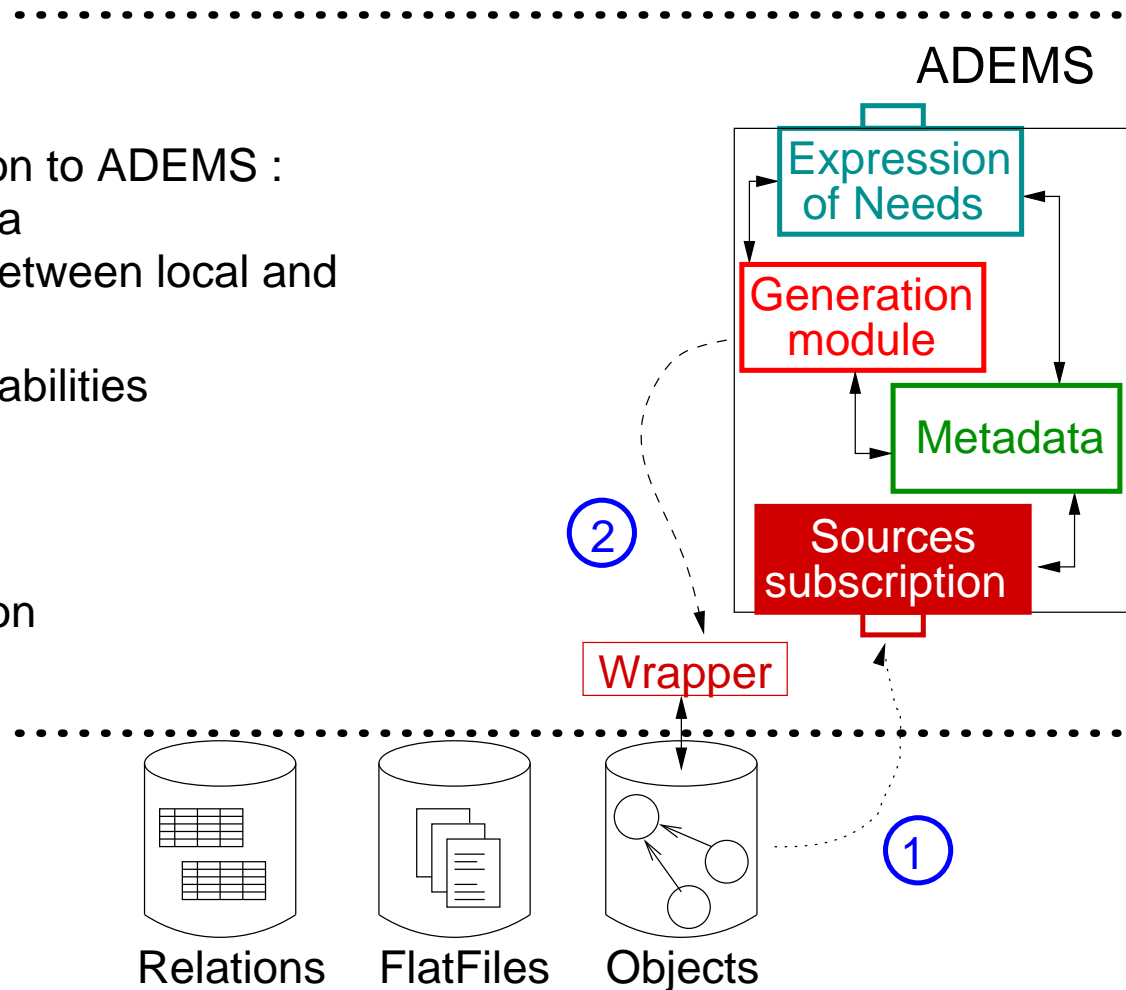
- Minimal and reusable mediators
less sensitive to global schema changes
- Ontology to represent the
global schema
- Local schemas mapped into
a mediator schema using **LaV**
- Mediator schema mapped into
the global schema using **LaV**



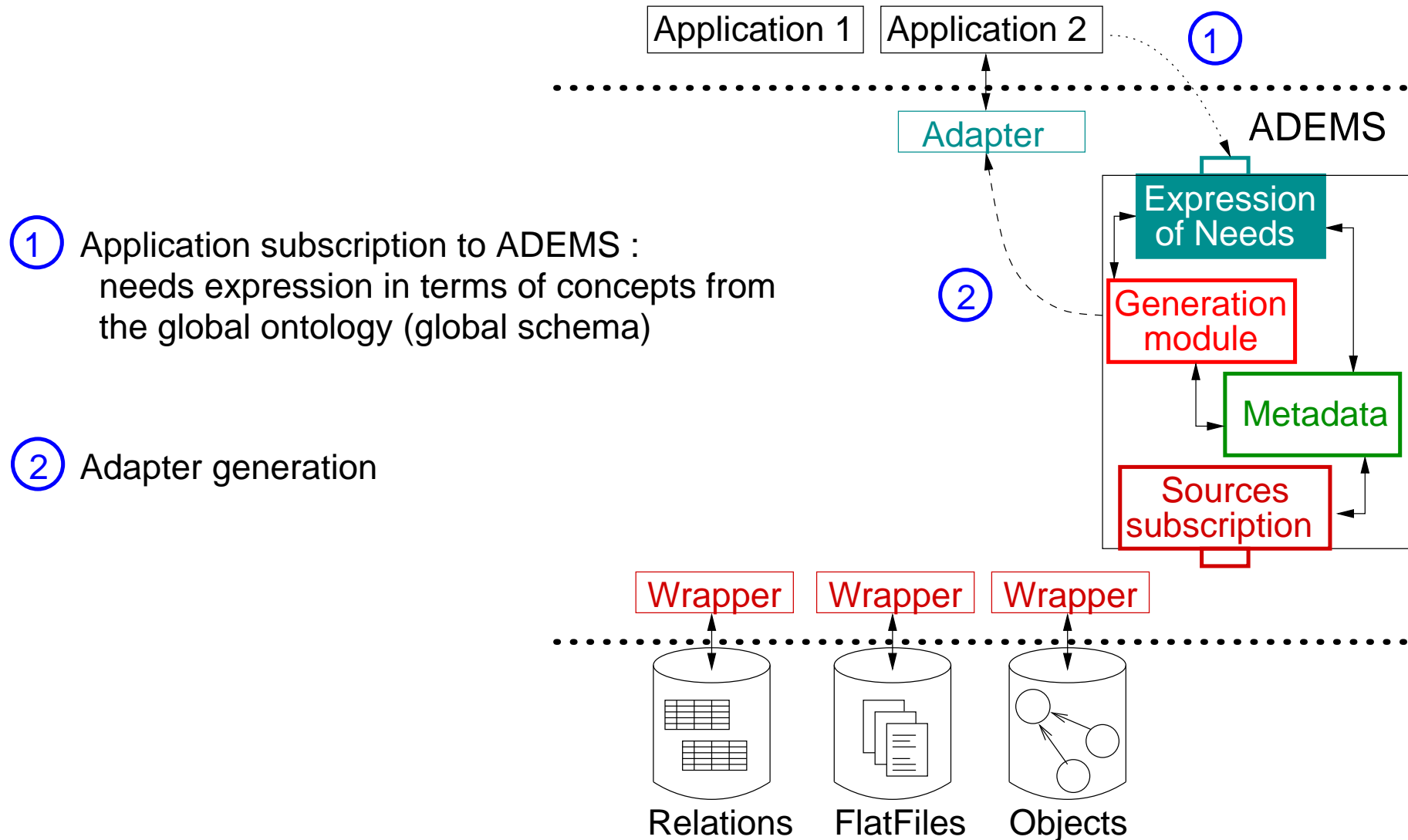
ADEMS Framework : source subscription

- 1 Source subscription to ADEMS :
 - exported schema
 - mapping rules between local and global schema
 - local DBMS capabilities

- 2 Wrapper generation



ADEMS Framework : application subscription

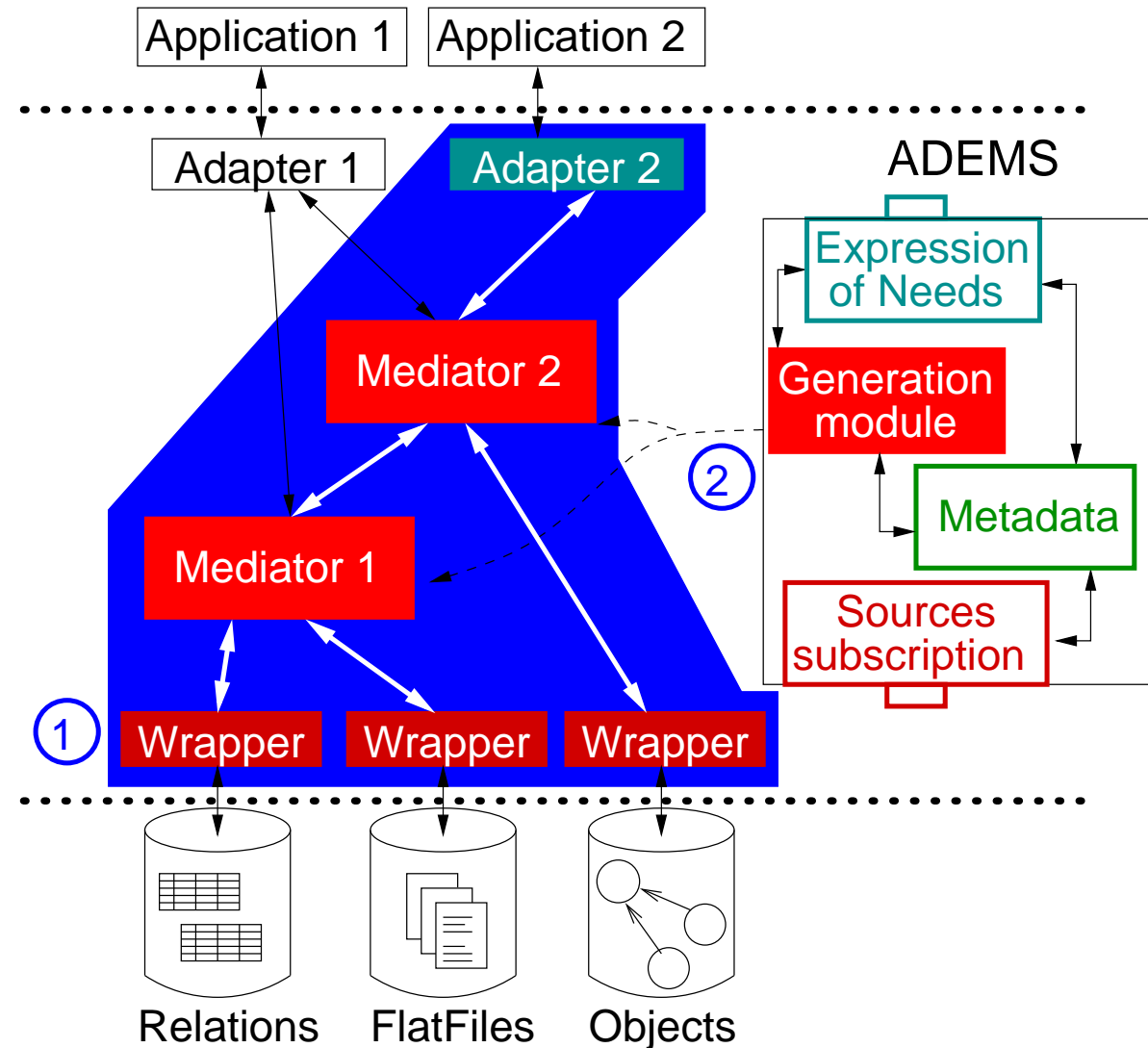


ADEMS Framework : mediation system configuration

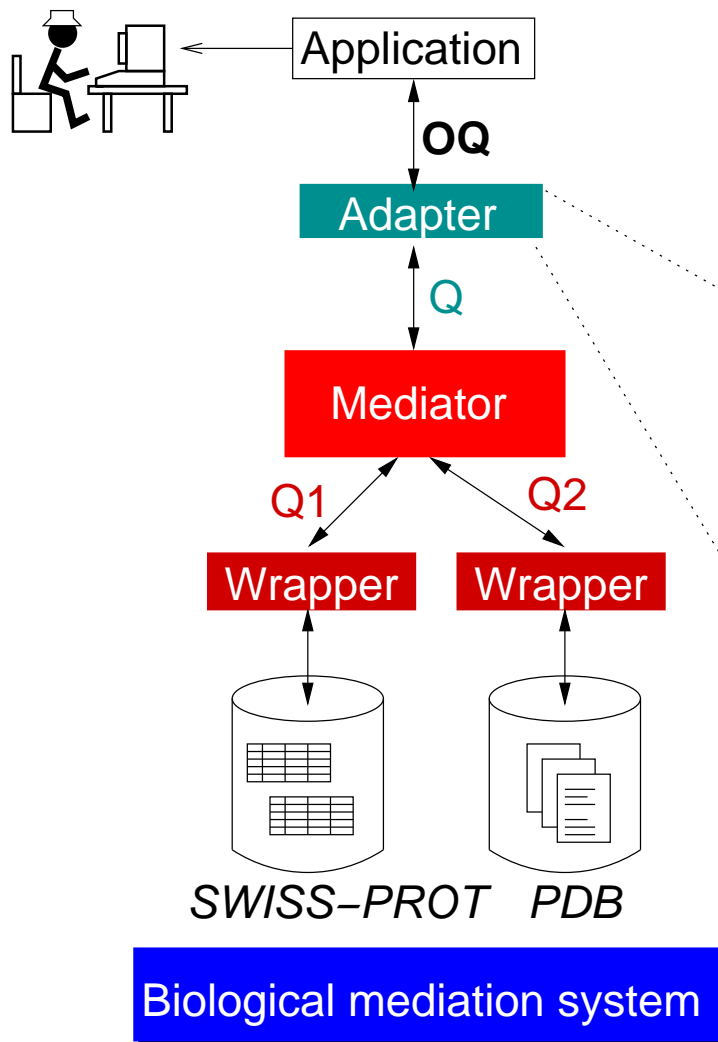
- ① Activation of subscribed local sources related to a needs expression
- ② Generation of mediator hierarchy

Resulting mediation systems are:

- well-adapted to user needs
- extensible
- reusable



Biological data mediation

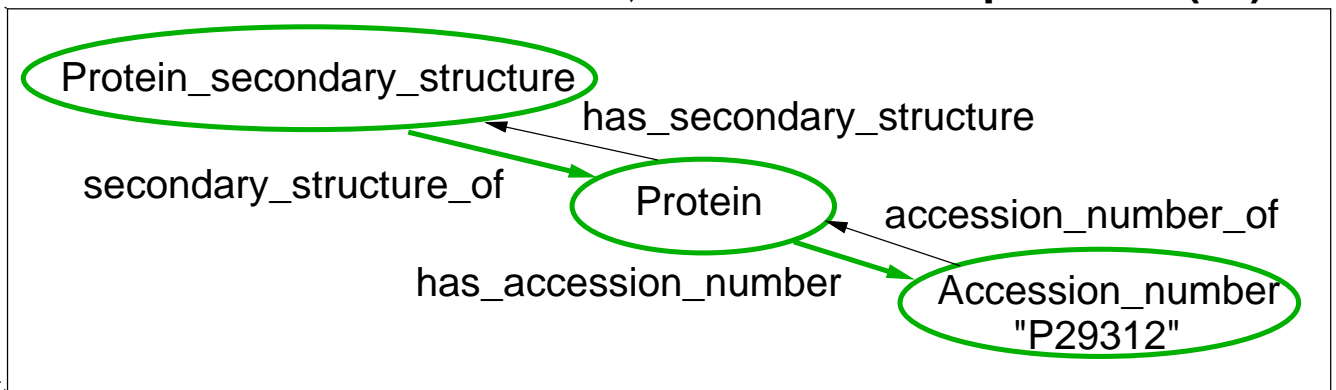


Ontology driven query (OQ)

```
Protein_secondary_structure which
secondary_structure_of Protein which
has_accession_number Accession_number "P29312"
```

Translating

Global expression (Q)



Rewriting

Local expressions (Q1, Q2)

