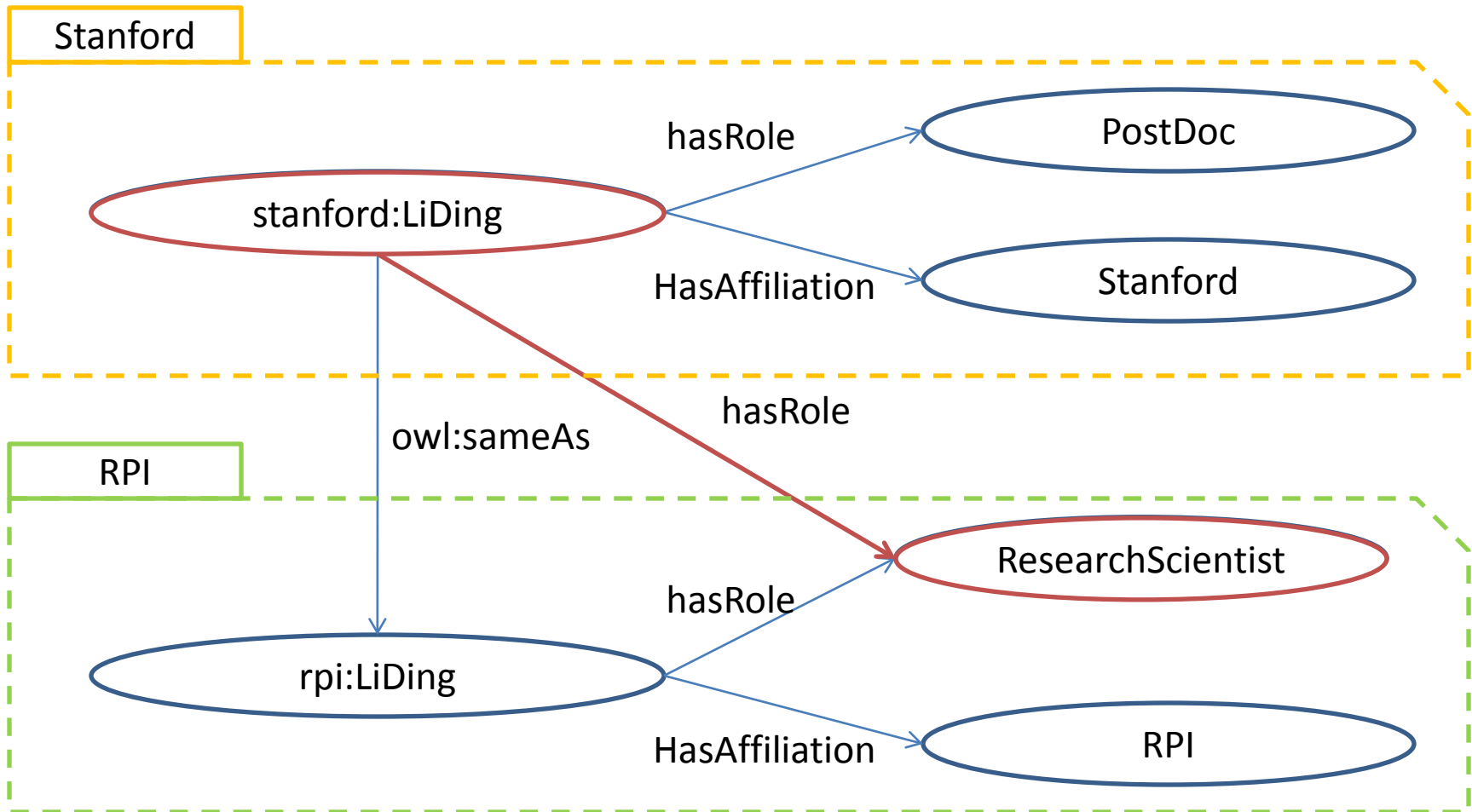


Contexts and RDF

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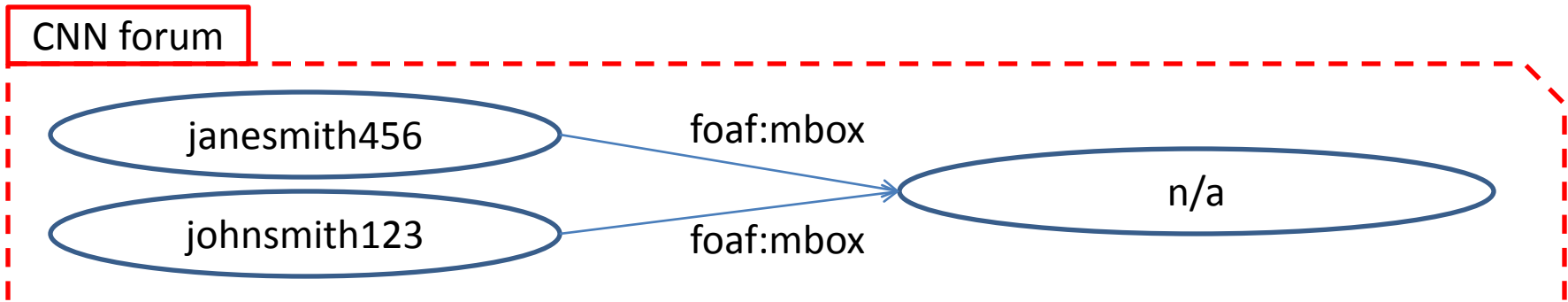
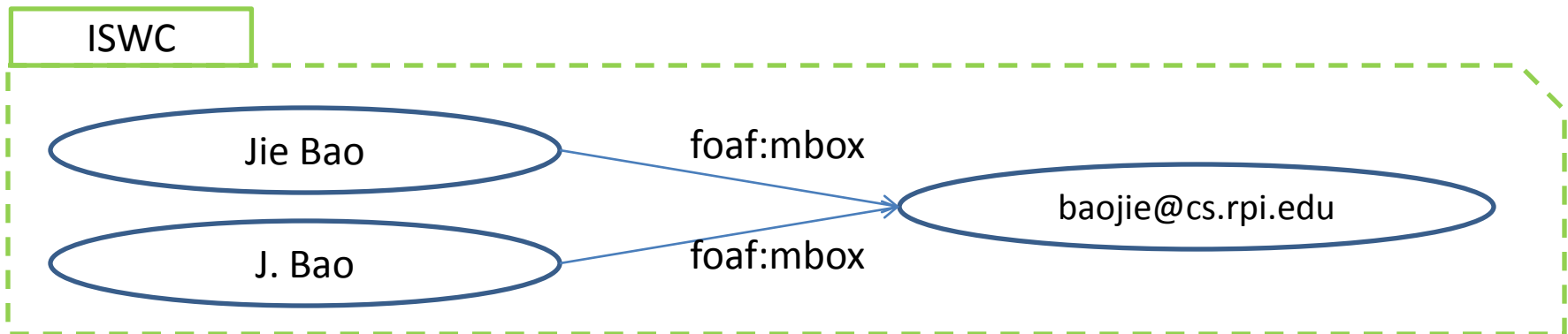
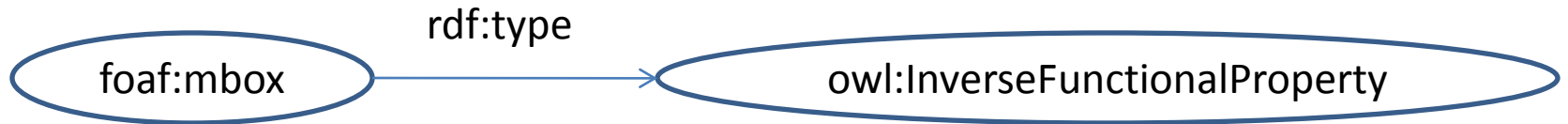
Context Matters

- Provenance



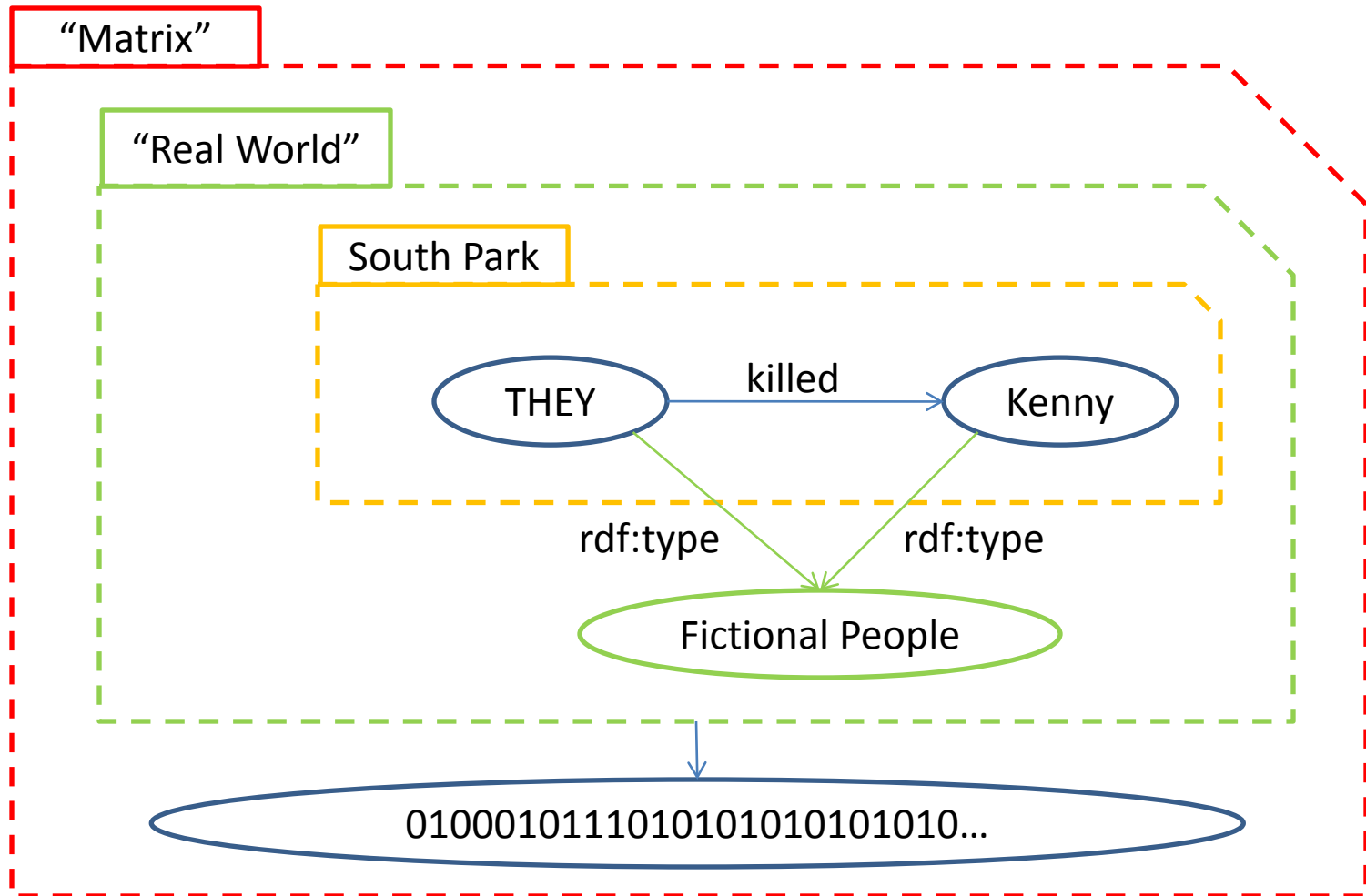
Context Matters

- Assumptions



Context Matters

- “World”



Contexts are

- Something related to the meaning of a sentence
 - Provenance (who, when, where, how, etc)
 - Assumptions (e.g., OWA, UNA)
 - World
 - ...
- Claim: when a triple is published/reused/inferred, its context should be made explicit.

Wait

- Don't we already have
 - Named graph
 - C-OWL
 - N3 quotation
 - Contexts in AI
 - ...

Named Graph

Name = context

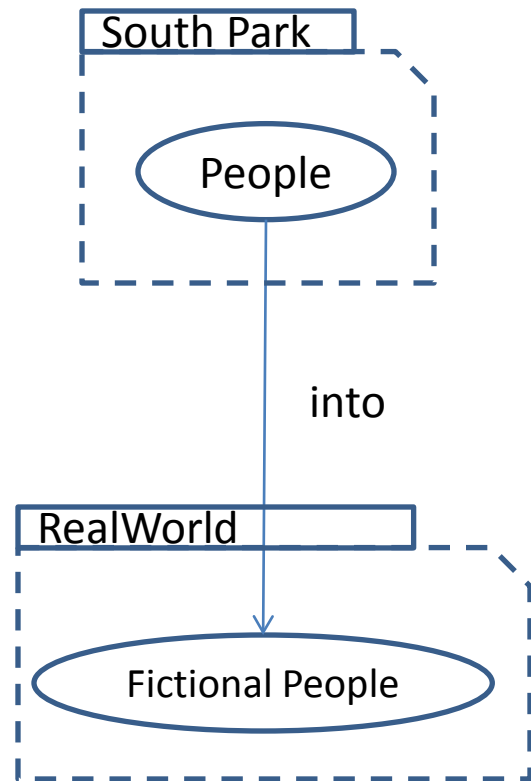
Graph_RPI

{:LiDing :hasRole
:ResearchScientist.}

Contexts are more than
names

- One triple may be in multiple contexts
- One context may be reused
- Relations between contexts need to be explicit, too.

C-OWL



- C-OWL provides an ontology mapping language that respects context.
- Knowledge transfer is controlled.
- Contexts are more than mapping

N3Logic

:ThomasJefferson says
{Men areCreated Equal.}

- Again, contexts are more than quotation.

Our Proposal

- Based on named graph
- Add two constructs
 - `rdf:context`
 - `rdf:import`

Adding Contexts to RDF

Part I: `rdf:context`

`G rdf:context C.`

C may give a context definition document

C agent LiDing.

C semantics OWL_Full

Part II: `rdf:import`

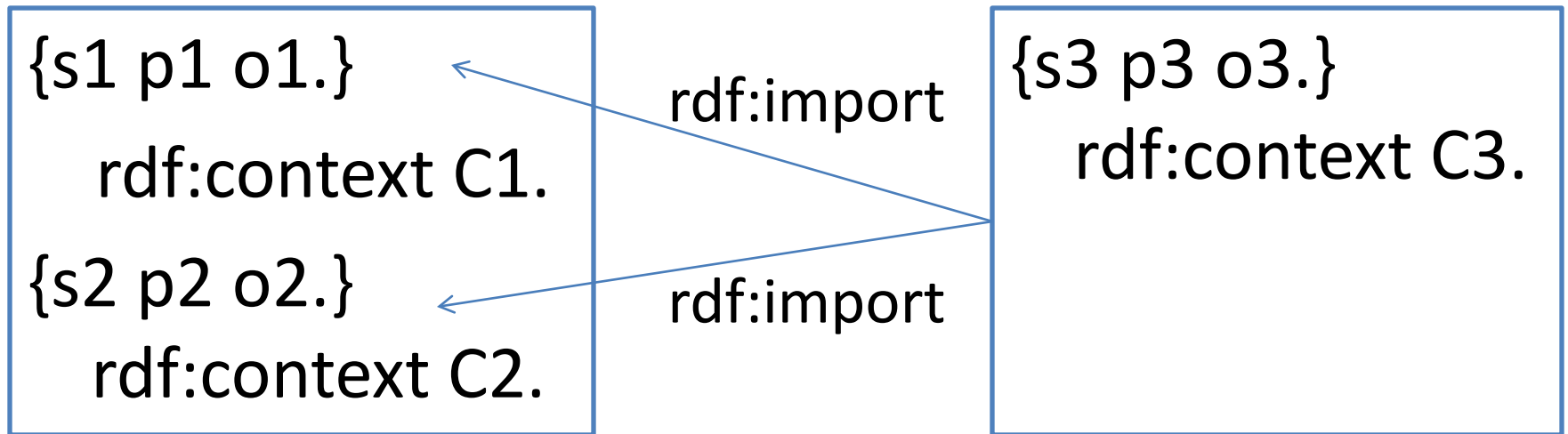
`G1 rdf:import G2.`

`G1 rdf:context C1.`

`G2 rdf:context C2.`

- Importing as *citation*
- How knowledge transferred from G2 to G1 *can* be controlled by relations between C1 and C2.

Partial Reuse



C3

C3 `rdfc:compatibleWith` C1.
C3 `rdfc:incompatibleWith` C2.

Reasoning with Contexts

Context relations

- Compatible
- Incompatible
- Extend
- In

Context rules

- C is compatible with *contexts with agent “rpi:LiDing”*
- C is compatible with contexts that *are compatible with C2*

Can be in OWL, RIF or other languages

Open Issues

- Context specification
 - Provenance model?
 - Context relation vocabulary?
- Formal semantics
- Default contexts