# Conceptual Model

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Conceptual Model

- Social relationships treated as first-class citizens in SNA

- Social relations could be represented as n-ary predicates

- n-ary relations not supported directly by RDF/OWL languages, but alternative exists

- *Reification is employed to represent* n-ary relations

- *relation is represented as a class, whose instances are concrete relations* of that type

Contd…

- RDF has a reified representation of statements - *rdf :Statement object*

- *It represents the class of statements*

- *Class has three* properties that correspond to the components of a statement - *rdf :subject, rdf :predicate, rdf :object*

- *These properties are used to link the statement instance to* resources involved in the statement.

- To enrich the representation of relations in FOAF is to use reification feature of the RDF language.

Example
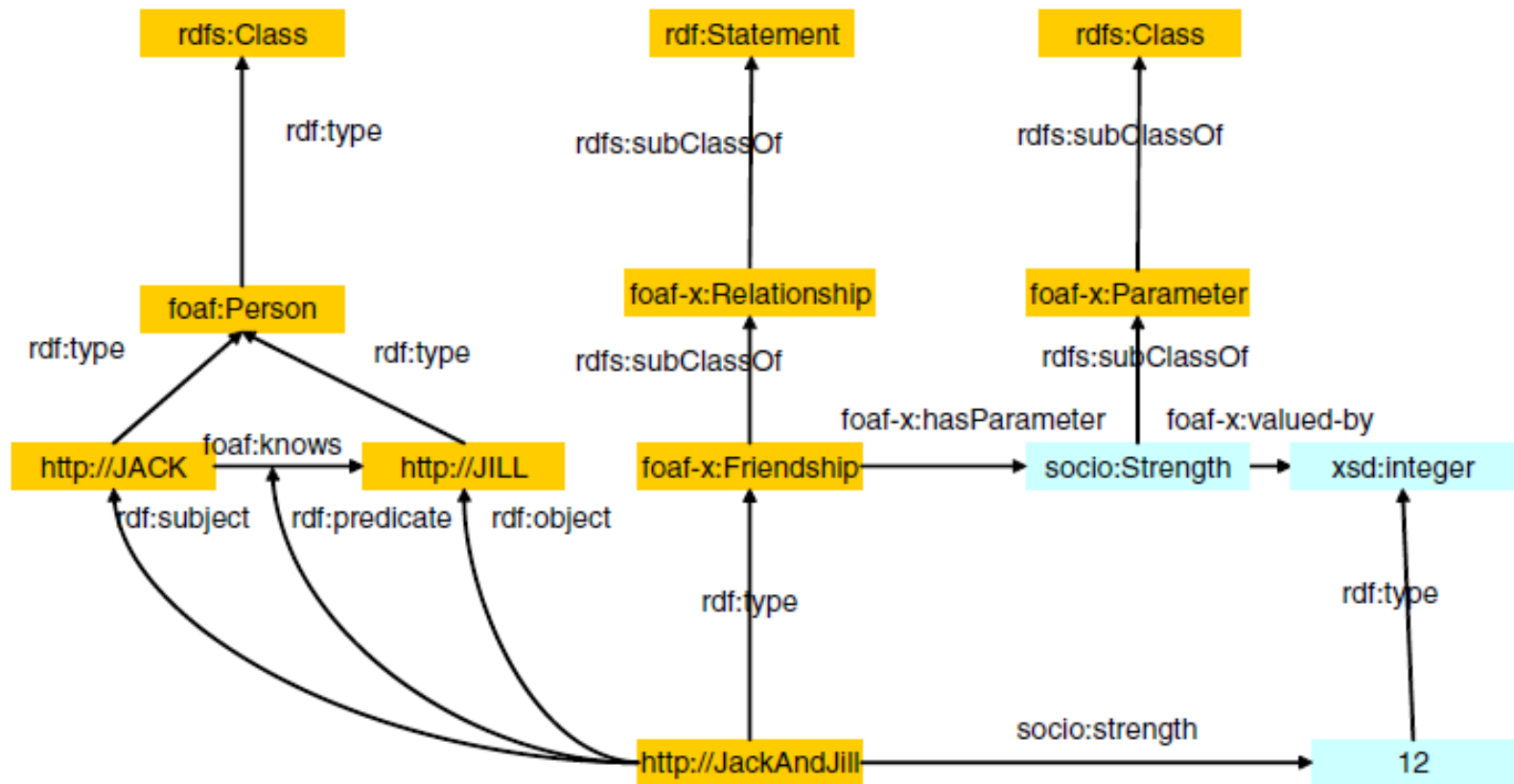
Example
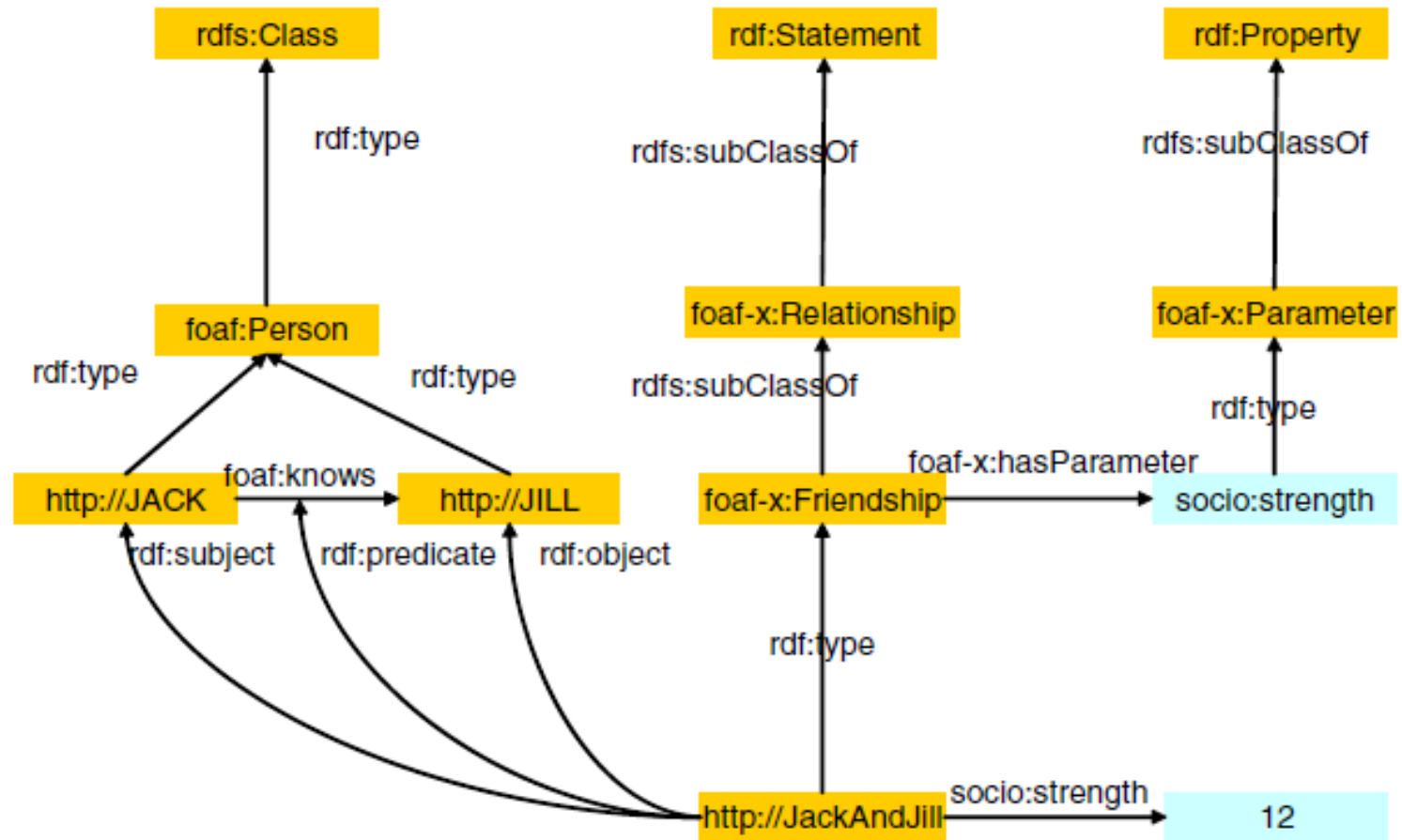
Explanation of previous 2 slides

- Common to both alternative - new Relationship class is related to a general Parameter class by the hasParameter relationship

- Two alternatives differ in the representation of parameters.

- a) Strength may be a subclass of Parameter valued-by integers, but requires 2 statements

- b) use rdf native method generic parameter class is defined as sub-class of *rdf :Property*
  - Adv. – allows to represent parameter values and restrictions on them
  - Disadv – not complaint to OWL -DL

Advanced Representation

- Two characteristics captured in advanced representation
    - Context dependence of social relations
    - separation between observed situation and its interpretation, as a social relation between two individuals
- Masolo et al. - relationships have a strong contextual dependence in which they are interpretable

- Identify and interpret certain interaction-pattern among individuals as a certain kind of relationship

- cognitive structuring – apply generic pattern with relationship to the actual state-of-affairs

- same observed state-of-affairs interpreted according to another pattern as different kind of relationship.
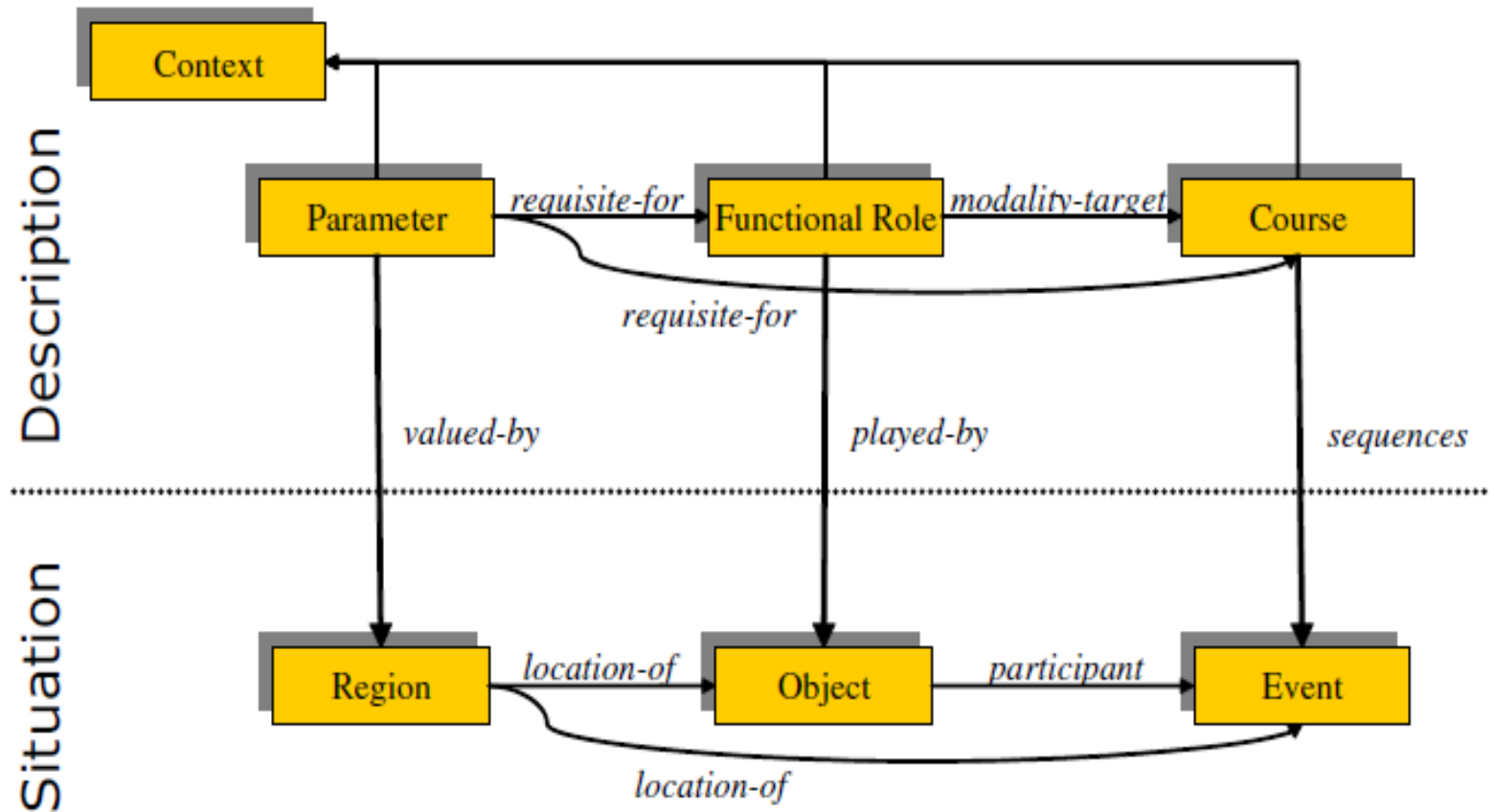
Contd…

- Ex. Student /Professor relationship (within university and global)

- Individual relationships and their generic description are thus clearly separate

- generic pattern of relationship comprises aspects shared among particular occurrences of the relationship

- Problem in knowledge representation - representation of context and the separation of the level of state-of-affairs

- Solution - Descriptions and Situations ontology design pattern clearly delineate these two layers of representation

Description & Situation (D&S) Pattern

- D&S is a generic pattern for modelling non-physical objects

- Intended meaning results from statements(combination with other entities)

- Ex. a norm, a plan, or a social role is usually represented as a set of statements

- Non-physical objects may change and be manipulated

- Ontology consider this by modelling the context or frame of reference on which they depend

- Ex. D&S applied in SLA & description of Web Services

D & S Model

Example of D&S