

# Summary of Our Proposal

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Tackle major issues by considering a simplified language

- The semantic of names of named texts and imports
- The semantics of domain restriction (aka modules)
- Segregation of names

# Challenges for named texts / imports

- Semantics relative to network
- Names are rigid identifiers, messes up quantifiers
- Circular imports

# Challenges for domain restrictions (modules)

- Terminological confusion
- Currently: semantics broken and inconsistent across standard
- Danger: involuntary free logic

# Challenges for Segregation

- No global convention (your segregated name might be my included name)
- Import of a segregated ontologies into non-segregated ontologies (without breaking the intended semantics)
- Interpretations of the same text may **not** vary w.r.t. the segregation status of a name

- Subset of classical FOL operators
- = is not a 'special symbol'
- Text operators: *txt*, *domain*
- Segregation operator *segr*
- Text baptism operator *baptise*
- Importation operator *import*

# The Interpretation Function

- Interpretation **not** relative to a vocabulary
- Old: Universe of reference, universe of discourse, name-interpretation, relation-mapping, function-mapping
- New: identifier mapping (names  $\rightarrow$  texts)

- Defined with respect to a corpus  $\mathcal{C}$  (= set of texts)
- $\mathcal{C}$  is satisfied by an interpretation  $I$  iff
  - $I(\Gamma) = \text{true}$ , for all  $\Gamma \in \mathcal{C}$ ; and
  - $I$  meets the segregation requirements of  $\mathcal{C}$ .



# Proposal: domain restriction (modules)

- Domain-operator on text-level
- $(\text{domain } N \Gamma)$  is true w.r.t  $I$  iff  $\Gamma$  is true w.r.t the restriction of  $I$  to the domain  $N$
- Domain-operator is syntactic sugar

# Proposal: segregation

- Segregation statements are parts of texts (like sentences)
- (segr term) is true w.r.t I iff I(term) is not in the universe of discourse
- Segregation commitments are evaluated on corpus level
- Domain-restrictions 'block' segregation commitments

# Proposal: labelled texts

- No reference to network, no rigid identifiers
- Texts are baptized with identifier (label); not a name
- (baptise  $N \Gamma$ ) is true w.r.t  $I$  iff identifier mapping of  $I$  maps  $N$  to  $\Gamma$

# Proposal: (circular) imports

- A corpus  $C$  with import-statements is satisfied by interpretation  $I$  iff  $C'$  is satisfied by  $I$
- Transformation from  $C$  to  $C'$  is defined syntactically
- Circular imports might lead to infinite  $C'$