OKN in Context: Microtheories and Contextualization of Knowledge Graphs

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Session Context: Our sessions have explored some Contexts for Context


There are four kinds of context involved in language understanding:
- the text or discourse;
- the situation; a context is a context of something;
- common background knowledge; and
- the intentions of the participants.

We may also talk about Actual, Modal, and Intentional Contexts.

Roles seem important:
“X counts as Y in context C”

Searle’s Construction of Social Reality
Session Context: Our sessions have generated some Qs about Representing Context

- One issue for the development and application of ontologies is that context is seldom “explicitly stated”.
  - We need a formal mechanism for specifying a context
- Description Logics of Context (DLCs)—an extension of Description Logics (DLs) for context-based reasoning. Our approach descends from J. McCarthy’s tradition of treating contexts as formal objects over which one can quantify and express first-order properties. DLCs are founded in 2-Dim possible world semantics, where 1 dimension represents a usual object domain and the other a domain of contexts,
  - So we have 2 interacting DL languages—the object and the context language—interpreted over their respective domains.
We want to know more about Cyc's Microtheories (MTs)

Frequent Q, “How is context handled in the large Cyc ontology?”

We've had a walk through of *The dimensions of context-space* by Douglas B. Lenat, January 1997 by David Whitten

http://ontologforum.org/index.php?title=ConferenceCall_2018_03_14&oldid=24713#hid2A3

MTs distinguish the origins of the facts, and provide meta-statements about the facts.

In CYC, the interpretation of every fact and every inference is localized to a specific region of “context space”. All conclusions that the inference draws involve only facts that are visible from that region of context space, that is, are stated either in the leaf microtheory or 1 of its general Mts.
OKN and Extracting Knowledge from the Semantic Web

A bit of a follow on from my sessions:
(Automated and Machine Learning for Knowledge Extraction, Ontology Development and Enhancement)

at last year's Summit ("AI, Learning, Reasoning, and Ontologies")

OKN uses lightweight standard vocabulary-like tools like Schema.org and a general representation for web-available information like a “knowledge graph.”

It would be good to know more about the OKN vision and more on 1 of the Q we asked”

Can more semantics be included in this effort and contextualized?
What issues arise as part of this process?
Our session

1. Charles Klein (Cycorp): Context Models for Production of Vital Information

2. Vinh Nguyen (Kno.e.sis Center, Wright State University): CKG Portal: A Knowledge Publishing Proposal for the OKN

3. Vinh Nguyen & Amit Sheth (Kno.e.sis Center) will briefly discuss a plan for "Evolving a Health KG."