Duck & Birdie
know what matters in science

“very impressive, professor...,
but does it work in theory?”
Health Warning:

This is going to be a pretentious talk
Reactions to This Keynote From Colleagues...

Assistant Professor

"Cool, I look forward to it."

(upon hearing what I proposed to talk about):

"But how are you going to make that interesting?"

Associate Professor #1

Associate Professor #2

Emeritus Professor

"Well, you have reached the age where you can scratch your butt in public, go ahead."

"Don’t do it. Giving a keynote means you are a washed-up has-been."
Philosophical confession coming up:

What I believe about scientific knowledge
Laws about the information universe, just like laws about the physical universe.
Did a decade of Semantic Web work help to discover any Computing Science laws?
What have we built?
“Now! That should clear up a few things around here!”
Let’s treat the last 10 years as a giant experiment
Some well known “laws” about information do indeed apply
Factual knowledge is a graph
Terminological knowledge is a hierarchy.
Terminological knowledge is much smaller than the factual knowledge
<table>
<thead>
<tr>
<th>Dataset</th>
<th>Schema closure</th>
<th>Full closure</th>
<th>Ratio</th>
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<tbody>
<tr>
<td>LUBM</td>
<td>8sec</td>
<td>1h15min</td>
<td>562</td>
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<tr>
<td>Linked Life Data</td>
<td>332sec</td>
<td>1h5min</td>
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<tr>
<td>FactForge</td>
<td>89sec</td>
<td>2h45min</td>
<td>111</td>
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</table>
Terminological knowledge is of low complexity
heterogeneity is unavoidable
heterogeneity is solvable socially, culturally, economically (and a little bit algorithmically)
publication should be distributed, computation should be centralised
speed increases with parallelisation
Throughput (Ktriples/sec) vs Input size (billion triples)
knowledge about knowledge
Finally: a call to arms
Duck & Birdie
know what matters in science

"very impressive, professor...,

but does it work in theory?

Theory?
What theory?
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