Please don't agree: Introducing Descartes-Core

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Krzysztof Janowicz
STKO Lab, University of California, Santa Barbara

Pascal Hitzler
DaSe Lab, Wright State University

Rene Descartes (1637): *'[As] for logic, its syllogisms and the majority of its other precepts are of avail- rather in the communication of what we already know,[...] than in the investigation of the unknown;'*

The 7± 2 Key Insights Leading to Descartes-Core

- The successful standardization of protocols made us believe that we should also **standardize meaning** on the Web. This is a fundamental **misconception**.
- The purpose of Semantic Technologies is to **make meaning explicit**, not to agree on what things/terms mean.
- Yes, volume and velocity are important but the key **value proposition** of the Semantic Web is to foster **publishing, retrieving, reusing data** in the presence of **variety**.
- The Web is heterogeneous. Please **feel free to disagree** on what terms mean, allow for contradictions and different perspectives, use the (knowledge representation) language that works best for your purpose, support different scales/granularities,...
- Invest in (ontology) **alignment** and semantic **translation** between different (micro-)ontologies and knowledge representation languages.
- Ontologies **restrict interpretations**, they do not fix meaning.

(See also: http://bit.ly/18hSOH4)

A First Descartes-Core Mission Statement

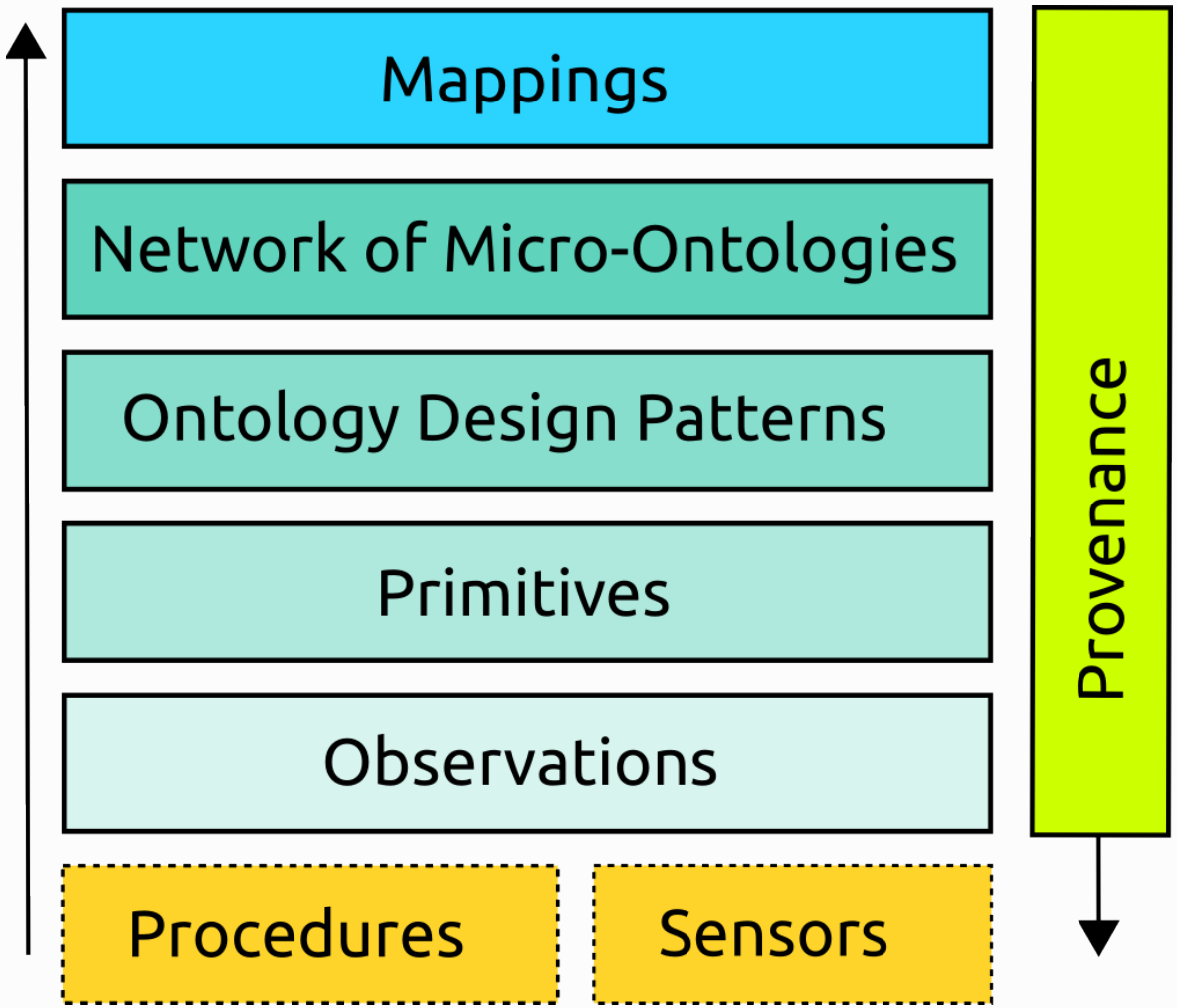
> *'Similar to Dublin Core for the library science and Darwin Core for ecology, we plan to establish Descartes-Core. Descartes-Core will not be a top-level ontology but a set of (geo-)ontology design patterns, micro-ontologies, best practice guides, examples, software, and services, that aim to foster semantic interoperability between different (Linked Data) sources without restricting semantic heterogeneity at the same time.'* *(http://vocamp.org/wiki/GeoVoCampSB2013)*

$\Rightarrow$ Bring what made the Web and Linked Data successful to (geo-) ontology engineering: **massive participation** and a clear **value proposition** that appeals to the individual.

$\Rightarrow$ Descartes-Core should lower the **initial entry hurdle** to make your data available, retrievable, and reusable.

$\Rightarrow$ In the Big Data age **synthesis is the new analysis**.

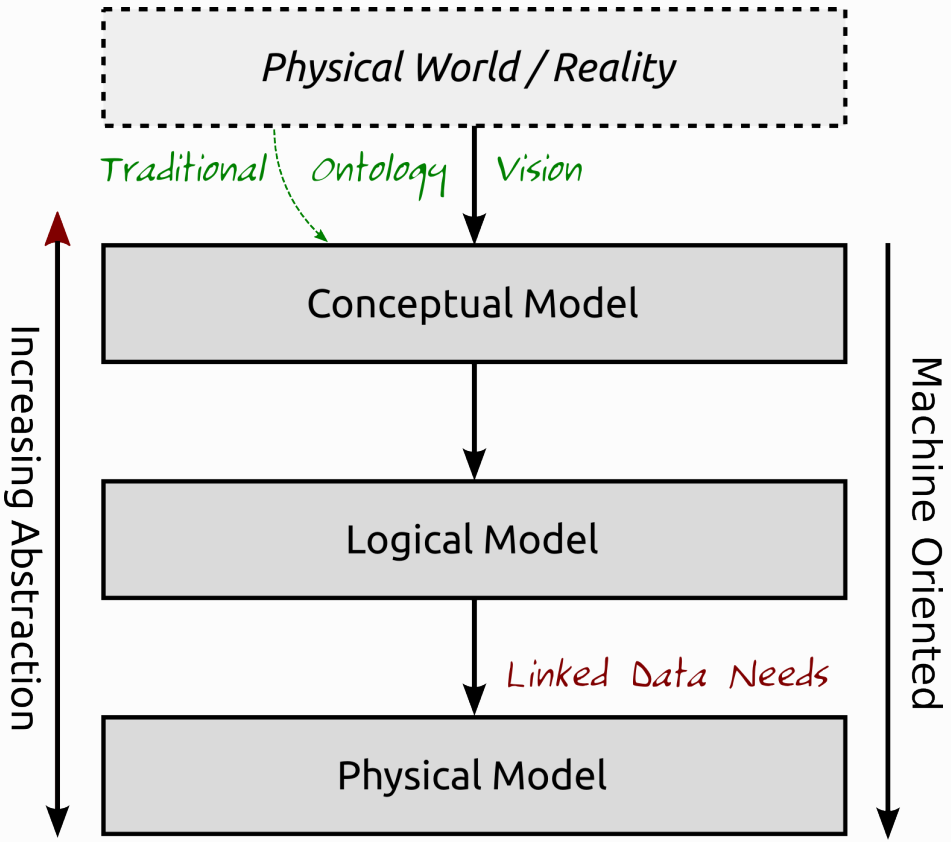
Descartes-Core Ontology Engineering Stack



(See: http://bit.ly/19y5dk0)

When Worlds Collide

The ANSI Model Layers



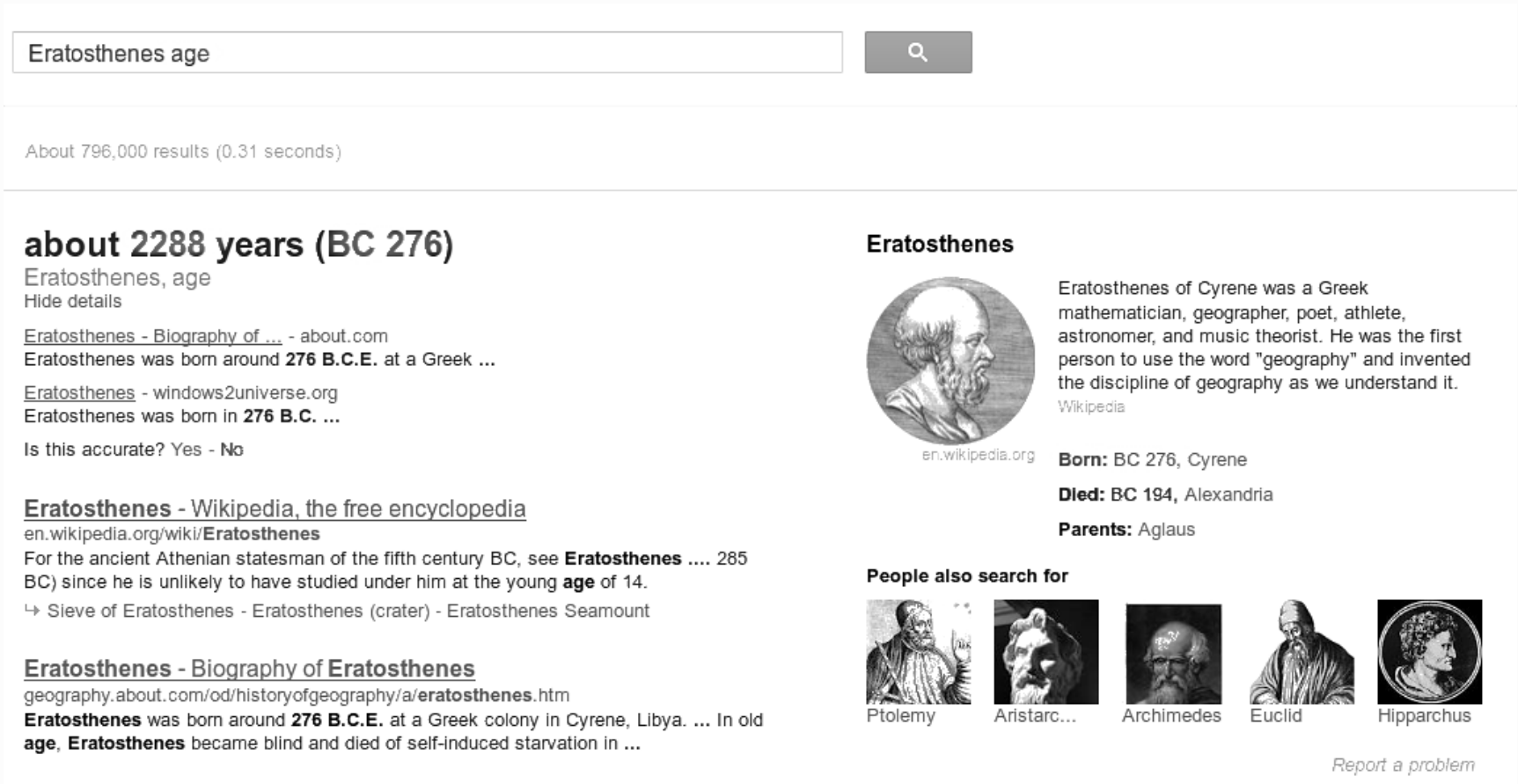
- *'Can there be rivers that do not carry water? Are waves events or objects?'*

vs.

- *'Rivers have a flow velocity. Given certain measurement procedures this can be observed at a sampling point. Velocity is of type xsd:float'*
- Ontologies vs. Vocabularies**?**

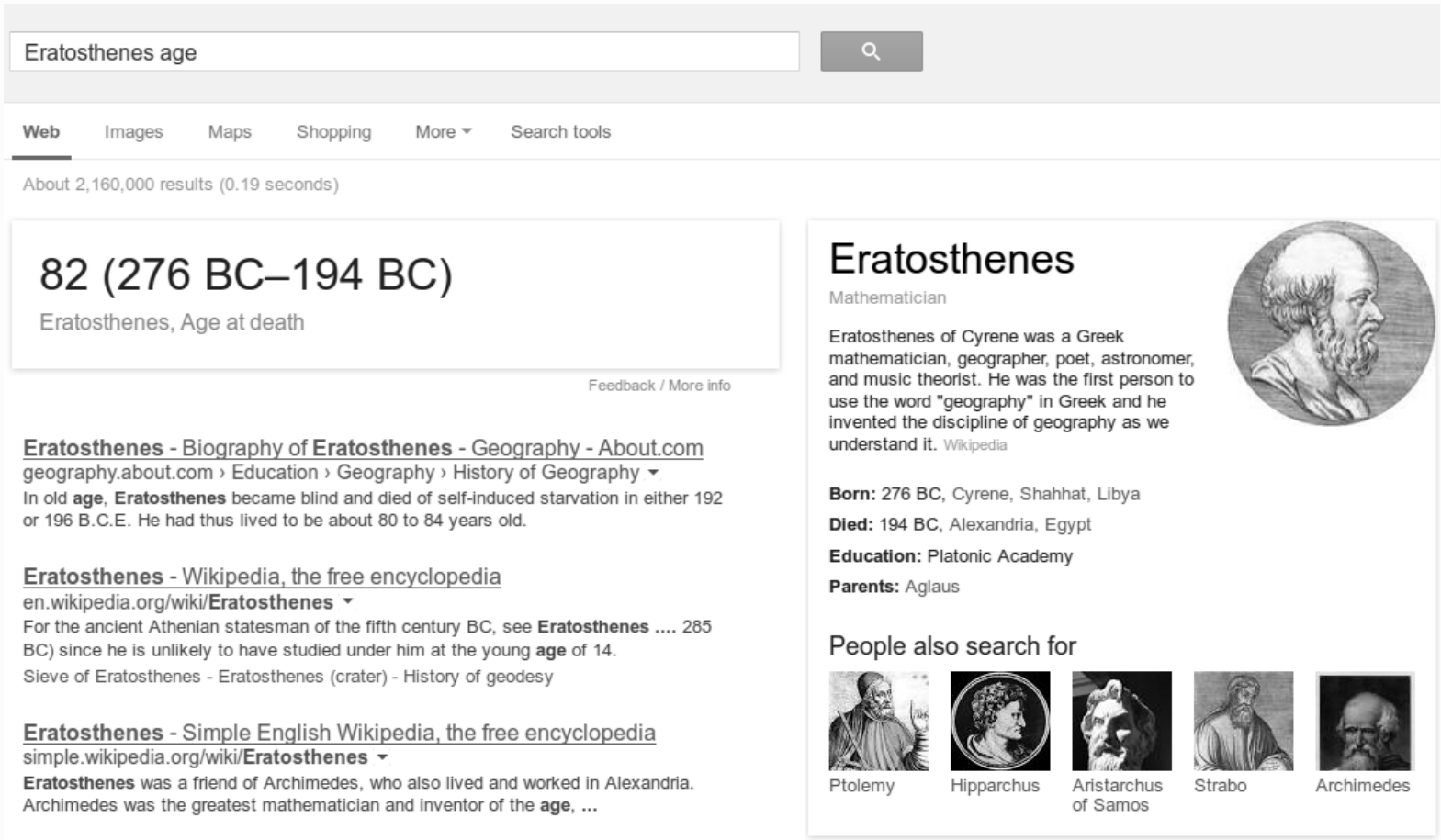
(See: http://bit.ly/HYL40t)

Do We Need Ontologies At All?



A query to Google's Knowledge Graph in 2012.

A Little Semantics Goes a Long Way...

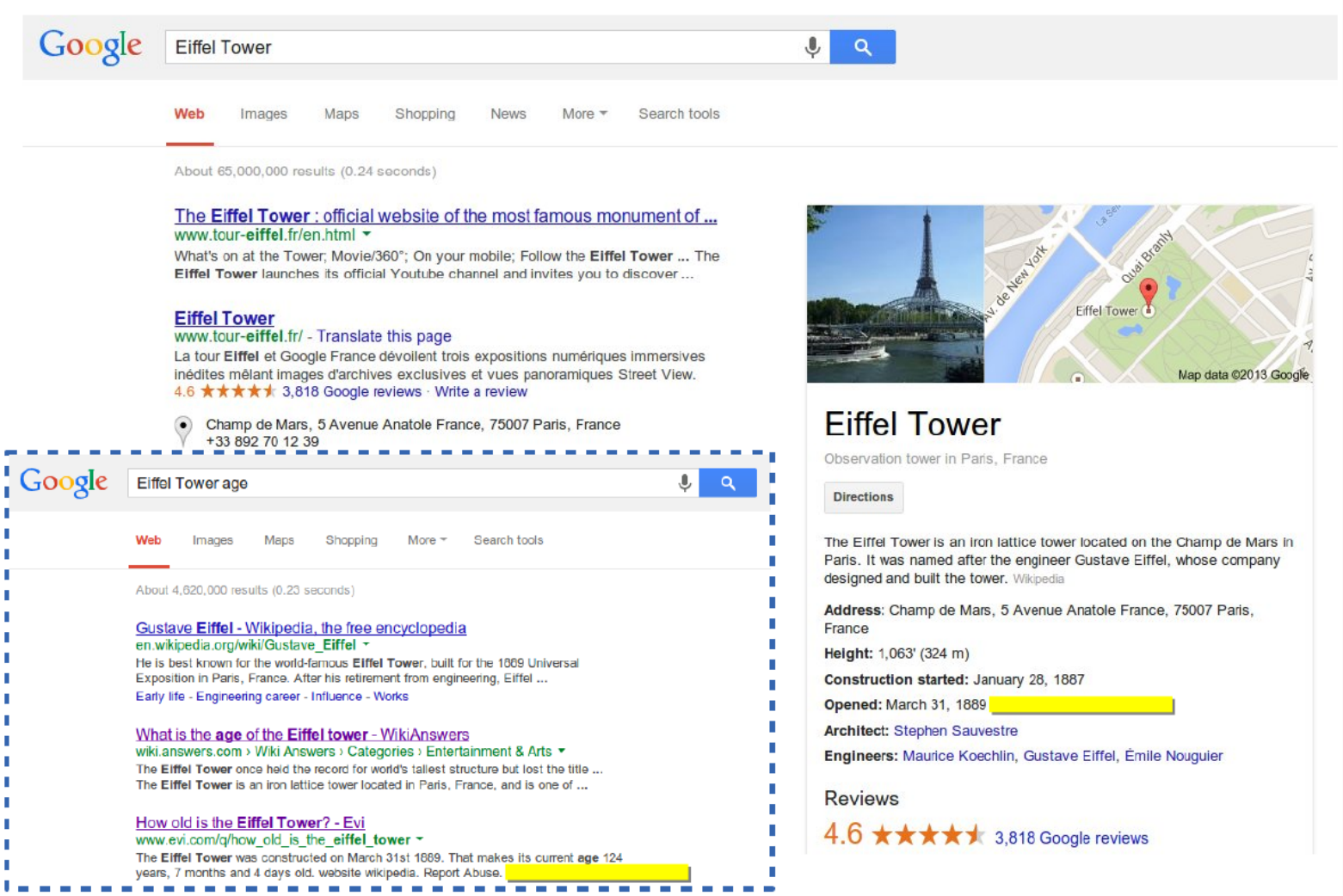


The same query one year leter (2013).

- **Semantic Rule**: *stop counting years once a person dies.*

(Try that in OWL ;-))

How To Massively Create / Mine Ontologies?



- **Generalized rule**: *Age is the time/duration from a xsd:date to the query time (or a second declared xsd:date value).* **???**

In A Nutshell

- Let's try to make the **user** (domain expert) the knowledge engineer.
- Develop a knowledge/ontology engineering stack that is informed by and optimized for **real data** and **real queries**.
- **Combine** inductive and deductive methods to scale ontology generation.
- **Heterogeneity** is a feature, not a bug.
- Let's **agree to disagree** on the meaning of terms, on the used KR languages, ontological commitments, ...
- Invest the time we freed up to do research on **alignment and translation** technologies.
- Create a **network of micro-ontologies** to generate global synergies while acknowledging the local character of meaning.