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](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)

⇒ 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.

⇒ Descartes-Core should lower the initial entry hurdle to make your data available, retrievable, and reusable.

⇒ In the Big Data age synthesis is the new analysis.
’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 later (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.