StratML and the *Strategic* Semantic Web:
Matching Ontologies for Human Results

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In *The Organized Mind: Thinking Straight in the Age of Information Overload*, Daniel Levitin says: "We humans have a long history of pursuing neural enhancement – ways to improve the brains that evolution gave us. We train them to become more dependable and efficient allies in **helping us to achieve our goals**." (emphasis added)

Enabling the documentation and sharing of goals in an open, standard, machine-readable format is the purpose of the Strategy Markup Language (StratML) standard (ISO 17469-1), whose vision is: **A worldwide web of intentions, stakeholders, and results**.

In *Incognito: The Secret Lives of the Brain*, David Eagleman questions the existence of free will, since our behavior is routinely controlled by a "team of rivals" operating in our subconscious minds. However, he does allow that "much of the knowledge stored in the depths of the unconscious brain began life in the form of conscious plans."

So it would seem that bad behavior may result, at least in part, from poor planning. Eagleman does not address the issue of how people can be expected to form conscious plans if they lack the free will to do so, but neither does he argue those who engage in criminal behavior should be allowed to run free simply because they cannot be blamed for their actions.

According to Wikipedia, "an ontology is a formal naming and definition of the types, properties, and interrelationships of the entities that really or fundamentally exist for a particular domain of discourse. It is thus a practical application of philosophical ontology, with a taxonomy."[1]

In Eagleman's terms ontologists can be considered to be a team of rivals and ontology mapping is part of the process by which meaning and relationships are surfaced for conscious action, thus turning philosophy into utility. It would be good if at least some ontologists could set aside their differences long enough to agree upon a plan to capitalize on that practical potential.

Relatively few people know or care much about the *Semantic Web* in general or ontologies in particular, but everyone cares about their own objectives, and therein lies the potential of the StratML standard to match the potentials of ontologies to the needs and wishes of human beings.

Among the goals of the Ontology Matching (OM) workshop series is to assess how academic advances are addressing real-world requirements.[2] In order to do that, the "real-world" (human) requirements must be specified in terms of measurable objectives against which academic "advances" can be applied in order to evaluate performance improvement. A good, first step toward that end would be for academicians to begin documenting and sharing their research objectives on the Web in StratML Part 1, Strategic Plan, format so that ontological tools can be applied to match them to the objectives of others.

Subsequently, the results – good, bad, and indifferent – should be documented and shared in an open, standard, machine-readable format like StratML Part 2, Performance Report, format so that stakeholders can make their own judgments regarding objectives about which they care.

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[1] Ontology (information science), downloaded from https://en.wikipedia.org/wiki/Ontology_(information_science)
[2] The goals of the OM-2015 workshop are available in StratML format at
http://xml.fido.gov/stratml/carmel/iso/OM-2015wStyle.xml

More specific topics of interest for consideration at the OM-2015 workshop include:

- Business and use cases for matching (e.g., big and open data) – Business and use cases should be documented in terms of long-term goals and measurable near-term objectives.

- Formal foundations and frameworks for matching – Individual and organizational plans should provide the foundation and "frameworks" for ontology matching and such matching should be viewed as a means to the desired ends (human objectives), rather than an end unto itself.

- Matching and big and/or linked data – The *Strategic* Semantic Web will constitute a very big and important dataset, interlinked to enable a virtuous cycle of continuously improving performance.

- User involvement (technical and organizational) – Users should be engaged on their own terms, i.e., based upon their own objectives.[3] Documenting objectives on the Web in StratML format will enable value-added intermediaries to facilitate such engagement, through DNS-like services.

- Social and collaborative matching – While social objectives may not warrant performance measurement and reporting, business and academic objectives certainly do and collaboration should be centered on such objectives. Maturation of social networking services for business- and scientific-quality usage requires support for an open data standard like StratML.

- Matching for traditional applications (e.g., information integration) as well as for emerging applications (e.g., search, web-services) – Information should be integrated to support human objectives and so too should Web services and search applications. It has been said that is what Google is about but does anyone think Google is the be-all and end-all in that regard?[4] The members of the StratML Committee certainly don't think so. Presumably, neither do ontologists.

By default, documenting human values, goals, objectives, and stakeholders in StratML format creates folksonomies. Over time, they can be turned into more or less formal taxonomies and ontological services can leverage them to give true, practical meaning to the rhetorical, marketing buzzword concepts of customer focus and user centricity. There will never be a better time to begin than now.

It would be good if the agendas for future OM workshops were to be published as performance plans, in an open, standard, machine-readable format like StratML Part 2. However, at the very least the inputs and outputs of each event should be published in some kind of machine-readable format to which ontology mapping can be applied, preferably one that is open and standardized on a global scale.

While failure to do so may not be criminal, it could be considered to be bad, antisocial behavior. The question is whether ontologists have the will (free or otherwise) to work more effectively together to enhance their neural connections – by collaborating to populate the *Strategic* Semantic Web – in order to improve their collective performance in pursuit of their common objectives.

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[3] Subsections 202(b)(4) & (5) and 207(d) of the eGov Act require U.S. federal agencies to work together to link their performance goals to key groups, including citizens, businesses, and other governments, as well as internal Federal Government operations; and adopt open standards (e.g., StratML) enabling the organization and categorization of Government information in a way that is searchable electronically and interoperably across agencies.

[4] In *Data-ism: The Revolution Transforming Decision Making, Consumer Behavior, and Almost Everything Else*, Steve Lohr quotes John Battelle as saying Google is a "database of intentions."