

# Summa Philosophiae: a Semantic Wiki for Professional Philosophers

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**Abstract.** The resources of the semantic web could be of great use to professional philosophers working in the analytic tradition. Given the highly structured and rapidly evolving nature of the state of the art in analytic discussions, it is argued that a semantic wiki would be the most appropriate tool to represent in a dynamic way the evolution of the state of the art. The massive collaboration of philosophy graduates could generate rapidly a very useful database, open for virtually infinite combinations of intelligent queries.

**Keywords:** Semantic Wiki, Philosophy, Scientific Publishing

## 1 Introduction: Philosophy on the Web

Contemporary analytic philosophy is a discipline which has a functioning very close to that of science: the discussion is structured by the contributions of a large number of collaborators, mostly published as short papers in specialized journals, and intended to make very precise points within a commonly recognized state of the art.

Because of its rapidly evolving state of the art, and also its massively collaborative nature, it is only natural that analytic philosophy has been using the tools of the web, which allows for massive collaboration and rapid changes. Besides many professional blogs, two websites are already particularly important for the contemporary practice of professional philosophy: the Stanford Encyclopedia of Philosophy, and PhilPapers.

The Stanford Encyclopedia of Philosophy [6] is an online encyclopedia run by Stanford University. For every entry, the editorial board of the encyclopedia contacts an expert in the field, who is in charge of writing the entry, and keeping it up to date across time (every two years or so). Hundreds of entries have been written since the creation of the encyclopedia in 1997, which make it one of the best philosophical encyclopedias in history.

A second important website is PhilPapers<sup>1</sup> PhilPapers is a comprehensive index of everything that gets published in philosophy (journals, books, papers, etc.). The references are organized in categories according to their field and the specific questions they deal with. This work is done by a large number of area

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<sup>1</sup> <http://philpapers.org/help/about.html>

editors who identify every day the references in the categories they are in charge of. PhilPapers is a very useful tool which allows professional philosophers to get comprehensive lists of what has been written on such and such a topic.

These two websites are both invaluable tools for professional philosophers. But there are still some resources that the web, especially the semantic web, could bring to use for philosophy. To put it shortly, we can say that the SEP constitutes a fantastic source of philosophical content, but this content remains very much unstructured from a digital point of view; it is just text, that only a human reader can interpret and manipulate (except for the basic functions for searching words). On the other hand, PhilPapers provides a very manipulatable database, which allows for various forms of automatic queries and surveys; but the data which is thus organized is only metadata about papers, their authors, dates, subjects, etc. There is no properly philosophical content.

A central idea of the Summa Philosophiae project is that, at least in the analytic tradition of philosophy, the philosophical content itself is sufficiently technical and organized that it could be registered and treated semantically, thereby providing a database of properly philosophical information which would allow for queries of high philosophical significance.

The need to introduce semantic tools in philosophy, and consequently to rely on a formal ontology of philosophy, has been underlined by the authors of the Indiana Philosophy Ontology Project (InPho)<sup>2</sup> [3]. The InPho project is an attempt to build up, in a semi-automatic way, an ontology of philosophy from the data of the SEP (and also other websites like PhilPapers). Other publications, in particular [4] by Smith and Grenon, also point to a growing awareness of the need for an ontology of philosophy. But, so far, what has been proposed are attempts to construct an ontology for already existing data (on the SEP, etc.). The Summa Philosophiae project will not be based on the analysis of a pre-given corpus, as is classical in the Digital Humanities [1]; the idea is to invite a massive collaboration of qualified contributors to provide the philosophical data itself, within a presupposed ontology.

In section 2, I develop the central project of Summa Philosophiae. In section 3, I present the software which is presently used to implement this project. In section 4, I consider some possible future improvements.

## 2 Summa Philosophiae: the basics

Summa Philosophiae is a semantic wiki: it combines the benefits of massive collaboration, proper to a wiki, and of searchable database, proper to the semantic web. Let me explain how these characteristics will be of use for professional philosophers.

The first use of the website will be to provide a rapidly and collaboratively updated state of the art on any subject matter. What is the state of the art on a given subject matter in analytic philosophy? What does it look like? Lets take

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<sup>2</sup> <https://inpho.cogs.indiana.edu/>

an example. What is the state of the art about incompatibilism in the Free Will debate? The state of the art is a series of arguments, sub-arguments, counter-arguments, etc., which every participant to the discussion has to be aware of. For instance, about incompatibilism, every specialist has to know:

- that there are presently two debated arguments for incompatibilism: the Manipulation argument, defended in particular by Mele (1995) and Pereboom (2001), and the Consequence Argument, originally defended by Ginet (1966) and van Inwagen (1974),
- that the Manipulation argument has two premises: a moral premise and an equivalence premise,
- that denying the equivalence premise is called the soft line reply and is defended in Mele (2008) while denying the moral premise is called the hard line reply and is defended in McKenna (2008),
- that the Consequence argument comprises a fixity premise, an alpha premise, and a beta premise,
- etc.

To sum up, the state of the art for a question in analytic philosophy has the following three properties: it is highly structured; it is highly collaborative; it is rapidly evolving, as new papers get published every month. For that reason, a tool designed to represent the state of the art in philosophy would have to have the same three characteristics: being highly structured, open to massive collaboration, and ready for constant evolution.

For all its merits, the SEP cannot have these characteristics. The data contained in it is not structured as a database; it is only human-interpretable text. It does involve some amount of collaboration, if we consider the number of authors, but for a given entry, there is only one (or two) author(s) in charge of writing it. This does have some merits: it gives the entry an undeniable unity and coherence. And I think philosophers will always need to have encyclopedia entries written entirely by one author. But entries written by massive collaboration provide other interesting facets: they are forced to reach a more consensual presentation of the issues, and they can be updated more rapidly. Which leads me to the third characteristic: *Summa Philosophiae* will allow for very rapid updates; as soon as a new paper gives a new twist to the state of the art on a given topic, any participant to the project will be able to register the information online on the wiki.

The collaboration model: in order to be living, a wiki needs a sufficiently large number of collaborators. The collaboration of thousands of contributors is the key to the success of wikis like Wikipedia or WikiHow, etc. *Summa Philosophiae*, unlike Wikipedia, is not intended to be open to anyones contribution. It will be open only to people holding a PhD or at least a graduation in philosophy. But even with this restriction, the number of philosophy graduates in the English speaking world is so high, that it will be sufficient to provide a basis for massive collaboration. We expect that PhD students in particular will represent an important part of our contributors, because they are likely to be familiar with web

resources, and because they are precisely at a stage of their career when they are working to catch up with the state of the art on their subject of study.

Massive collaboration comes with its typical risks of conflicts and controversial contributions. To resolve such problems, a governance structure will have to be set in place. The details are still a matter of reflection but the core idea of Summa Philosophiae is (unlike wikipedia) to give contributors a level of authority in conflicts corresponding to the scientific authority they hold in the real-world, academic life.

The second use of the website will take advantage of the semantic feature. Going on Summa Philosophiae, it will not only be possible to read a page on the state of the art about a given topic. You will also be able to make intelligent queries on the database which will have been progressively constituted by so many contributions on the different pages.

I give more details about the kind of queries that are possible in the next section, where I present the software presently used to implement Summa Philosophiae. Should Summa Philosophiae be restricted to analytic philosophy? Wouldnt it be more interesting to make systematic queries on *all* philosophical arguments, including arguments from the past? The answer is that Summa Philosophiae will be open to any style of philosophy which is centered on highly structured and disambiguated arguments. Many philosophers of the past obviously satisfy such a description, and enriching the database with their arguments will be a significant improvement of Summa Philosophiae, allowing for more complex and richer queries. On the other hand, there are also philosophers whose methodology is based on ineliminable use of metaphors or polysemy, and who explicitly reject the constructive use of arguments. For such authors (or their specialists), Summa Philosophiae will probably not be adequate to capture their thought.

### 3 The Implementation: SMW+ (DataWiki)

In order to implement the concept of Summa Philosophiae, a semantic wiki software has been used, which is based on the Semantic extension for MediaWiki, together with another extension called Halo. The software SMW+ was initially developed by Ontoprise, and is now supported under the name DataWiki<sup>3</sup> by the start-up DIQA-Projektmanagement GmbH.

The main user-interfaces for users of Summa Philosophiae on SMW+ are the content pages and the query interface.

#### 3.1 The Content Pages

The content pages look like regular wiki pages. There are pages dedicated to:

- concepts (e.g. Free Will): in these pages, the different definitions of the concept are presented, and a list of the most important and disputed theses involving the concept;

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<sup>3</sup> <http://www.diqa-pm.de/en/DataWiki>

- theses (e.g. incompatibilism): in these pages, the thesis will be defined, in its various versions, but the main part of the page will be dedicated to a presentation of the state of the art about the main arguments for and against the thesis;
- arguments (e.g. consequence argument): in these pages, more information will be given about the versions of the argument, and the state of the art about which premises are stronger or weaker, and which rejoinders are presently defended;
- authors;
- works (books and papers).

To someone who only reads a page like these, they will look very much like a regular wiki or encyclopedia entry (except for the fact that it will be more structured and highly technical). But the most important is in fact the semantic data which is registered in these pages. Here is how it works.

In SMW+, each page corresponds to an object in the ontology. A concept page is an object different from a thesis page, or from an argument page. These objects have different properties, defined in the ontology. A thesis can bear the relation has argument to an argument page, while an argument can bear the relation has premise to a thesis page. And both can bear the property involves concept to a concept page.

All these properties are registered by the contributors when they fill in the pages. There are two ways to register this kind of semantic information: one is to learn the language of the SMW+, and write down the properties at the same time as one writes the philosophical content in a wikitext editor. For instance, in order to note that incompatibilism has, as an argument, the consequence argument, you should write the following in the page incompatibilism: `[[Has argument::Consequence Argument]]`.

The other solution is to write only text in the wikitext editor, and then turn to the user-friendly annotation interface, where you can add the properties by clicking on the relevant bits of information, together with the help of the semantic toolbar (see figure 1).

The precise ontology is closer to that of Smith and Grenon [5] than to the InPhO (the reason is that InPhO does not differentiate between domains, theses, arguments, etc. All of them are categorized as ideas). Here is a sample list of the main properties:

- Properties of concepts:
  - Is involved in (thesis / argument)
  - Is in domain (domain of philosophy)
- Properties of theses:
  - Defended by (author)
  - Defended in (work)
  - Has argument (argument)
  - Involves concept (concept)
- Properties of arguments:

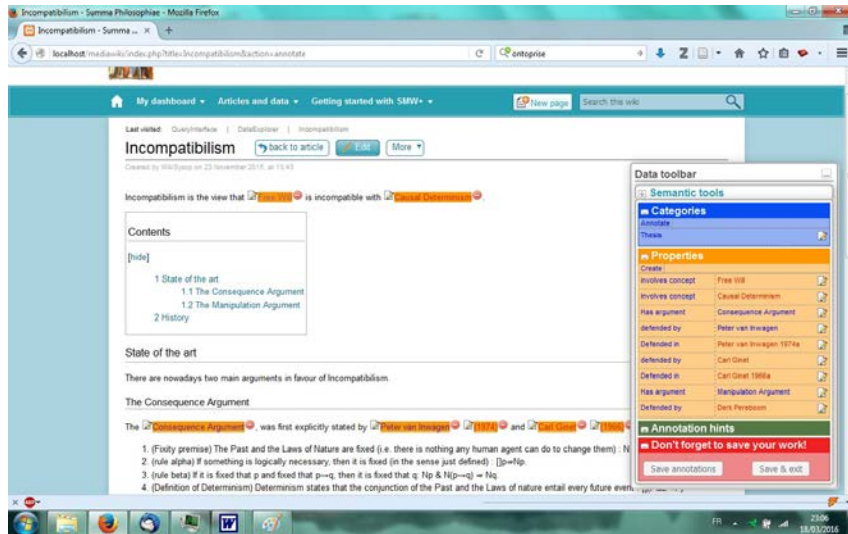


Fig. 1. The annotation interface

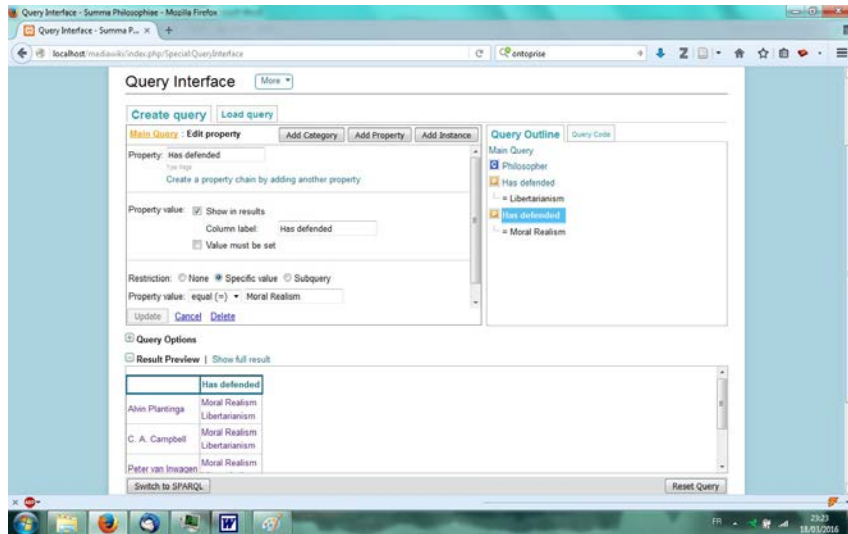
- Defended by (author)
- Defended in (work)
- Has premise (thesis)
- Has conclusion (thesis)
- Involves concept (concept)

It should be noticed that this is (like Smiths and InPhOs ontologies) an ontology of meta-philosophy rather than a philosophical ontology properly speaking (involving categories like substance, physical substance, living organism, etc.). The constitution of a computer-aided philosophical ontology is an interesting prospect (see e.g. [5]) but would necessarily be highly controversial, while our ontology must reflect a scientific consensus.

### 3.2 The Query Interface

The second important interface is the Query Interface. Here, the users can make complex queries on the data registered in the different pages. For instance, you can query:

- all philosophers who have defended both libertarianism about free will and moral realism in ethics,
- all arguments that have been defended both by Descartes and by Plantinga,
- all arguments for Metaphysical Realism that have been defended after 1980 and that start with premises that Plato accepted,
- or any query of the kind.



**Fig. 2.** The query interface

To do this, you only have to fill in a form (see figure 2), informing the category of object you are looking for (philosopher, argument, etc.) and the properties which the object must have (Has defended so and so).

As the data collected in the database becomes more and more complete, the results of such queries will be more and more interesting and relevant. The query interface can also be used to *check* what data is presently missing in the database, and thereby determine where more work is to be done in terms of completing the content pages.

## 4 Two Possible Further Developments

Two further developments can be considered which are not presently implemented in the software SMW+, one in the short run, the second in a longer run. The first would be to render Summa Philosophiae compatible with the bibliography software Zotero. PhilPapers has this functionality. The integration with Zotero could be used for instance in the following way. Suppose you want to constitute a complete bibliography of recent papers defending the consequence argument. What you have to do then is only to create a query in the query interface, looking for all papers which have the property being written after 1980 and the relation defends to consequence argument. A list will be automatically generated in the query interface, which Zotero will be able to directly capture as a useable bibliography.

The second development was suggested to me by Emmanuel Desmontils (University of Nantes). The suggestion would be to develop more integration be-

tween the data provided by the websites of philosophy journals and the Summa Philosophiae. For scientific journals in general, it seems reasonable to think that the conditions of scientific publishing will develop more and more semantic features in the years to come. This prospect is defended in particular by Tim Berners-Lee and James Hendler in [2]: In the next few years, we expect that tools for publishing papers on the web will automatically help users to include more of this machine-readable mark-up in the papers they produce. If this development occurs also for philosophy journals, then we can imagine that the journals website will give, as information about a given paper, not only its author, date, area of specialization, etc. but also semantic data directly relevant to the ontology of Summa Philosophiae, i.e. defends argument so and so, has premises so and so, etc. If this happens, then the contributors of Summa Philosophiae will have a very rapid way to integrate the newly published information in the wiki pages, and integration into Summa Philosophiae can become an important benefit for editors, as it will give immediate visibility to their papers for the audience interested specifically in the theses and arguments discussed.

## References

1. B. Bachimont. Engagement sémantique et engagement ontologique. In *Ingénierie des Connaissances: Évolutions Récentes et Nouveaux Défis*, pages 305–323, Paris, France, 2000. Eyrolles.
2. T. Berners-Lee and J. Hendler. Publishing on the semantic web. *Nature*, 410(6832):1023–1024, 2001.
3. C. Buckner, M. Niepert, and C. Allen. From encyclopedia to ontology: Toward dynamic representation of the discipline of philosophy. *Synthese*, 182(2):205–233, 2011.
4. P. Grenon and B. Smith. Foundations of an ontology of philosophy. *Synthese*, 182(2):185–204, 2011.
5. A. Monnin and E. Félix. Essai de comparaison des ontologies informatiques et philosophiques: entre être et artefacts. In D. Phan, editor, *Rochebrune'09 : Ontologie et dynamique des systèmes complexes, perspectives interdisciplinaires*, page 14, Megève, France, 2009. Chemin de Traverse.
6. J. Perry and E. Zalta. Why philosophy needs a dynamic encyclopedia. 1997.