The Syzygy Surfer: Creative Technology for the World Wide Web

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ABSTRACT
This paper discusses our development of a new Web engine, the Syzygy Surfer, which aims to induce a search/browsing experience that is more creative than traditional search. We do this by purposefully combining the ambiguity of natural language with the precision of Semantic Web technologies. Here we set out the framework for our investigation and discuss the context and background ideas that are informing the research. The paper offers some preliminary examples taken from our work in progress on the device and suggests the way ahead for future developments and applications.

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Not Applicable [Web Science] – *Creative Technology*

General Terms
None of the listed 16

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Pataphysics, Semantic Web, Panalogy

1. INTRODUCTION
Although the Web may be used for creative pursuits, the typical interaction between a user, artist or otherwise, and the Web is generally not supportive of creative endeavors. This is somewhat ironic because, in the early days, using the World Wide Web was all about serendipity and creativity in a way that has been largely lost as it has grown and been commercialized. Many users don't even realize that the Web was originally designed to "browse" and "explore," surfing has become a term for the secure journey to a well-regarded site full of safe (by the user's own standards) content.

What would be the requirements of a creative technology, a surfing (not search) engine for the creative technologist? Firstly, simple randomness will not be enough. Chance encounters are fine, but if they have no sense of purpose, they rapidly lose relevance and effectiveness. The key is to retain the element of surprise while at the same time avoiding a succession of complete non-sequiturs and irrelevant content. What is required, instead, is an underlying *poetic* sense of unity. Consider this quotation from Jorge-Luis Borges' story *The Analytical Language of John Wilkins*, which describes 'a certain Chinese Encyclopedia,' the *Celestial Emporium of Benevolent Knowledge*, in which it is written that animals are divided into:

- those that belong to the Emperor,
- embalmed ones,
- those that are trained,
- suckling pigs,
- mermaids,
- fabulous ones,
- stray dogs,
- those included in the present classification,
- those that tremble as if they were mad,
- innumerable ones,
- those drawn with a very fine camelhair brush,
- others,
- those that have just broken a flower vase,
- those that from a long way off look like flies.

If the Web could categorize resources into categories such as these, and deliver a set of responses that could deliver this level of charming surprise, and in a way that is creatively useful, then we have a tool which artists will really value.

Harnessing the creative intelligence of the web provides the potential for a new way of working, one in which its semantic content is able to interact in effective dialogue with the user in order to throw up creative ideas. The applications of this tool could be to the origination of artworks, but also to challenging areas such as browsing rich data collections (e.g. large libraries, media archives, and so on). What is required is a tool which engages with the user's subjectivity in a way that is uniquely personalised and yet intelligent in itself, purposefully purposeless, capable of operating a creative loop that is dynamic yet exhibits a sense of underlying poetic unity. In other words, the web could become the ideal creative partner if only it understood better what you want, what you mean, what you need, and, more, was able to come up with things you didn't realise you want meant, or needed, but were pleased to discover when you found them.

2. PATAPHYSICS AND PANALOGY
Our prototype of this kind of "creative encounter engine" generates the ambiguity described above by combining an idea from a philosophical tradition that is particularly human and unlikely to be representable on the machine at any time in the foreseeable future with a technical architecture that was designed specifically as a mechanism for representing on a machine much-more-human cognitive behaviors. The philosophical tradition in question is *pataphysics*, defined by Alfred Jarry (1873-1907) as

"the science of imaginary solutions" and resting on "the truth of contradictions and exceptions."

Since the Semantic Web's metadata is based on exactly the avoidance of this kind of inconsistency and ambiguity, we require a new approach in order to make 'syzygy surfers' of the users. Since "pataphysics is to metaphysics as metaphysics is to physics", so we can consider what lies beyond metadata to be *patadata*.

We draw our technical inspiration from the concept of panalogy (parallel analogy) put forth by Push Singh and Marvin Minsky. The idea behind panalogy is that our understanding of any object or action cannot easily be explained in any single conceptualization. Thus, a panalogy may become a way to conceptualize a computational model for introducing ambiguity, because the same object may be formally ontologized in a number of ways. The ambiguity of experience is the hallmark of creativity, that is captured in the essence of pataphysics. Traversing the representations of this ambiguity using algorithms inspired by the *syzygy*, *clinamen* and *anomaly* of pataphysics, using a panalogical mechanism applied to metadata, should be able to humanize and even poeticize the experience of searching the Web.

3. SYZYGY SURFER

The syzygy surfer therefore works by taking input from a user and generating a panalogic patadata structure for each entry. We explore examples on the various searches (see "fabulous", "mermaid" and "trained" below) and show how the engine can be used for image and multimedia syzygy surfing.



Figure 1: Syzygy operation

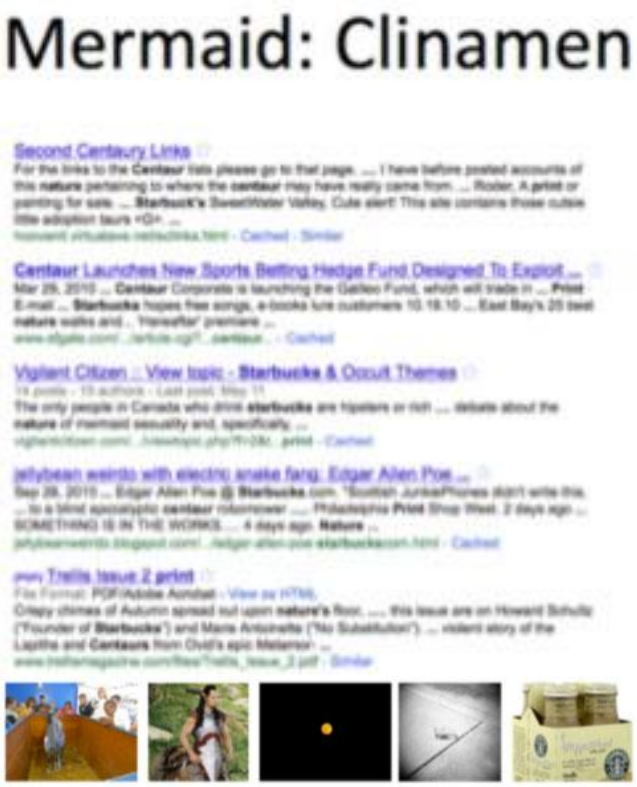


Figure 2: Clinamen operation

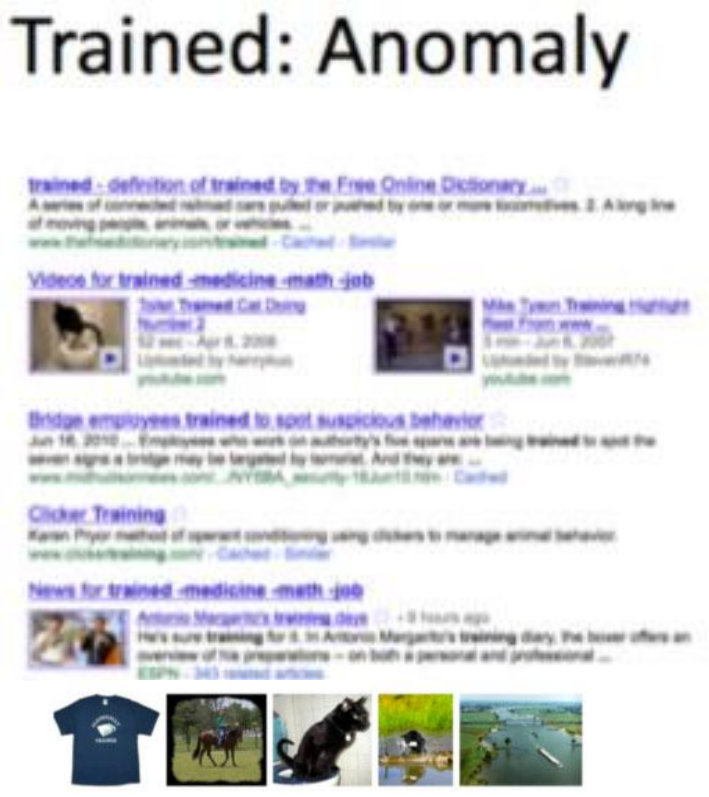


Figure 3: Anomaly operation

We are currently implementing this algorithm both for the open Web (where we will use the results of a commercial search engine as the basis for our searches) and in a domain dependent way, aimed at exploring large collections such as the holding of the British Library or the Institut National Audiovisuel Français, where we can preprocess many of the terms and relationships for an efficient search and to be sure that the results remain surprising but useful.

Interface design will be an important aspect of the finished Syzygy Surfer. Our early thoughts about this rest on a few guiding principles: the user should be able to choose the techniques they use; the system will suggest terms that the user could add or change in their searches; there should be a 'breadcrumb trail' of navigation, so that users can readily find their way back to a previous instance; the look and feel should reflect the underlying workings of the engine, but at the same time be attractive, accessible and adaptable.

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