

Interacting with Multi-Scale Structures of Online Political Debates by Visualizing Phylomemies

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Abstract : The ICT revolution has given birth to an unprecedented world of digital traces and has impacted a wide number of knowledge-driven domains such as science, education or policy making. Nowadays, we are daily fueled by unlimited flows of articles, blogs, messages, tweets, etc. The internet itself can thus be considered as an unsteady hyper-textual environment where websites emerge and expand every day. But there are structures inside knowledge. A given text can always be studied in relation to others or in light of a specific socio-cultural context. By way of their textual traces, human beings are calling each other out: hypertext citations, retweets, vocabulary similarity, etc. We are in fact the architects of a giant web of elements of knowledge whose structures and shapes convey their own information. The global shapes of these digital traces represent a source of collective knowledge and the question of their visualization remains an opened challenge. How can we explore, browse and interact with such shapes? In order to navigate across these growing constellations of words and texts, interdisciplinary innovations are emerging at the crossroad between fields of social and computational sciences. In particular, complex systems approaches make it now possible to reconstruct the hidden structures of textual knowledge by means of multi-scale objects of research such as semantic maps and phylomemies. The phylomemy reconstruction is a generic method related to the co-word analysis framework. Phylomemies aim to reveal the temporal dynamics of large corpora of textual contents by performing inter-temporal matching on extracted knowledge domains in order to identify their conceptual lineages. This study aims to address the question of visualizing the global shapes of online political discussions related to the French presidential and legislative elections of 2017. We aim to build phylomemies on top of a dedicated collection of thousands of French political tweets enriched with archived contemporary news web articles. Our goal is to reconstruct the temporal evolution of online debates fueled by each political community during the elections. To that end, we want to introduce an iterative data exploration methodology implemented and tested within the free software Gargantext. There we combine synchronic and diachronic axis of visualization to reveal the dynamics of our corpora of tweets and web pages as well as their inner syntagmatic and paradigmatic relationships. In doing so, we aim to provide researchers with innovative methodological means to explore online semantic landscapes in a collaborative and reflective way.

Keywords : online political debate, French election, hyper-text, phylomemy

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