Contropedia - the analysis and visualization of controversies in Wikipedia articles

Erik Borra
University of Amsterdam
borra@uva.nl

Esther Weltevrede
University of Amsterdam
esther@digitalmethods.net

Paolo Ciuccarelli
Politecnico de Milan
paolo.ciuccarelli@polimi.it

Andreas Kaltenbrunner
Barcelona Media
kaltenbrunner@gmail.com

David Laniado
Barcelona Media
david.laniado@gmail.com

Giovanni Magni
Politecnico de Milan
gvn.magni@gmail.com

Michele Mauri
Politecnico de Milan
michele.mauri@polimi.it

Richard Rogers
University of Amsterdam
rogers@uva.nl

Tommaso Venturini
Médialab, Sciences Politiques
tommaso.venturini@sciencespo.fr

ABSTRACT
Collaborative content creation inevitably reaches situations where different points of view lead to conflict. In Wikipedia, one of the most prominent examples of collaboration online, conflict is mediated by both policy and software, and conflicts often reflect larger societal debates.

Contropedia is a platform for the analysis and visualization of such controversies in Wikipedia. Controversy metrics are extracted from activity streams generated by edits to, and discussions about, individual articles and groups of related articles. An article's revision history and its corresponding discussion pages constitute two parallel streams of user interactions that, taken together, fully describe the process of the collaborative creation of an article. Our proposed platform, Contropedia, builds on state of the art techniques and extends current metrics for the analysis of both edit and discussion activity and visualizes these both as a layer on top of Wikipedia articles as well as a dashboard view presenting additional analytics. Furthermore, the combination of these two approaches allows for a deeper understanding of the substance, composition, actor alignment, trajectory and liveliness of controversies on Wikipedia.

Our research aims to provide a better understanding of socio-technical phenomena that take place on the web and to equip citizens with tools to fully deploy the complexity of controversies. Contropedia is useful for the general public as well as user groups with specific interests such as scientists, students, data journalists, decision makers and media communicators.

Contropedia can be found at http://contropedia.net.

Categories and Subject Descriptors
D.2.2 [Design Tools and Techniques]: User interfaces; H.5.3 [Group and Organization Interfaces]: Computer-supported cooperative work

General Terms
Algorithms, Measurement, Design, Human Factors

Keywords
Wikipedia, Controversy Mapping, Digital Methods, Information Visualization, Actor-Network Theory, Data Mining

Acknowledgments
The research leading to these results has received funding from the EU FP7 EINS under grant agreement No 288021. We also wish to thank Alexis Jacomy and Benjamin Ooghe for their help in the development of this project.