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AUTOMATED AND COMMERCIALIZED REALITY CONSTRUCTIONS: GOVERNANCE BY ALGORITHMS ON THE INTERNET

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Abstract

The growing societal significance of algorithms on the Internet has by now been widely acknowledged in and beyond the academic field (Salvin 2011, Mager 2012, Gillespie 2014, Steiner 2012, Anderson 2013, Latzer et al. 2014). A wide range of our daily activities in general and our media consumption in particular are increasingly shaped by algorithmic selection – in essence, by the automated assignment of relevance to certain automatically selected pieces of information. The selection of online news via search engines and news aggregators, the consumption of music and video entertainment via recommender systems, the choice of services and products in online shops and the selection of status messages displayed on social online networks are prominent examples of this omnipresent trend.

This paper focuses on the governing effects of Internet algorithms in information societies. It analyzes the often-neglected significance, role and challenges of (software) technology in the co-evolutionary institutionalization of governance. According to the IR16 conference theme Digital Imaginaries, this paper scrutinizes the topic: relationship between technology and the imaginary. More precisely, it explores the reality construction by algorithmic selection on the Internet that includes and at the same time goes far beyond the formation of collective imaginaries of networked technologies. The paper highlights the interplay with and the differences to reality constructions by traditional mass media, and investigates the societal and democratic consequences of this growing Internet phenomenon.

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Theoretically, the paper builds on (co-)evolutionary innovation studies (Nelson/Winter 1982, Ziman 2000, Frenken 2006, Latzer 2013) in order to adequately grasp the interplay of technological and societal change, and combines these with institutional approaches to incorporate governance by technology or rather software as institutions (Reidenberg 1998, Lessig 1999, Shah/Kesan 2011, Napoli 2014).

The paper shows how the market of attention – the central scarce resource in information societies – is increasingly being co-produced and allocated by automated algorithmic selection in many life domains. Algorithmic selection on the Internet has in fact become a growing source and factor of social order (Scott 1987), of a shared social reality (Berger/Luckmann 1967) that is increasingly being co-constructed by automated algorithmic selection on the Internet. The paper reviews the wide spectrum of individual actions and behavior that is co-governed by algorithmic selection applications. For this endeavor it methodologically draws from an empirical survey of Internet-based services that rely on automated algorithmic selection (Latzer et al. 2014), a functional typology derived from it (search, aggregation, observation / surveillance, recommendations, prognosis, scoring, filtering, content production and allocation), and an analysis of associated potential social risks (manipulation, biases and distortions of reality, constraints on the freedom of communication, threats to privacy and intellectual copy rights, social discrimination, possible transformations of cognitive capabilities and adaptations of the human brain, uncertain effects of the power of algorithms). It argues that – similar to the construction of realities by traditional mass media – automated algorithmic selection applications shape daily lives and realities, increasingly affect the perception of the world, and influence behavior. However, major differences are identified and their possible consequences, in particular for the democratic quality of societies, are discussed.

It claims that these differences are to be found first in the growing individualization/personalization of constructed realities, and second in the constellation of actors. This constellation differs, because (a) the selection and hence the governance is shaped and dominated by global companies, and because (b) algorithms are increasingly (self-learning) autonomous actors. Finally, the paper points out that these differences create risks, among other things the detrimental effects on the democratic quality of societies. It outlines options of how to influence this course of development by a mixture of (a) governance by algorithms – a form of governance by design, and (b) governance of algorithms – that includes options ranging from self-help by users to self-regulation by the industry, and finally statutory state regulation.

References

Anderson, C. W. (2013), Towards a Sociology of Computational and Algorithmic Journalism, *New Media & Society*, 15 (7), 1005-1021.

Berger, P. L.; Luckmann, T. (1967), *The Social Construction of Reality*, New York: Doubleday.

Frenken, K. (2006), *Innovation, Evolution and Complexity Theory*, Cheltenham: Edward Elgar.

Gillespie, T. (2014), *The Relevance of Algorithms*, in: Gillespie, T.; Boczkowski, P.; Foot, K. (eds), *Media Technologies*, MA: MIT Press, 167-194.

Latzer, M. (2013), *Medienwandel durch Innovation, Ko-Evolution und Komplexität. Ein Aufriss*, *Medien und Kommunikationswissenschaft*, 2/2013, 235-252.

Latzer, M.; Hollnbuchner, K.; Just, N. & Saurwein, F. (2014), *The economics of algorithmic selection on the Internet*. University of Zurich, Zurich.http://www.mediachange.ch/media//pdf/publications/Economics_of_algorithmic_selection_WP.pdf

Lessig, L. (1999), *Code and other laws of cyberspace*, New York, NY: Basic Books.

Mager, A. (2012), *Algorithmic Ideology: How Capitalist Society Shapes Search Engines*, *Information, Communication & Society*, 15 (5), 769-787.

Napoli, P. M. (2014), *On Automation in Media Industries: Integrating Algorithmic Media Production into Media Industries Scholarship*, *Media Industries Journal*, 1(1), 33-38.

Nelson, R.; Winter, S. (1982), *An Evolutionary Theory of Economic Change*, Cambridge: Harvard University Press.

Reidenberg, J. R. (1998), *Lex Informatica: The Formulation of Information Policy Rules through Technology*, *Texas Law Review*, 76 (3), 553-593.

Salvin, K. (2011), *How Algorithms Shape Our World*, TED Talks, July 2011, http://www.ted.com/talks/kevin_slavin_how_algorithms_shape_our_world.html.

Scott, W. R. (1987), *The Adolescence of Institutional Theory*, *Administrative Science Quarterly*, 32 (4), 493-511.

Shah, R. C.; Kesan, J. P. (2011), *Software as Governance*, *Illinois Public Law and Legal Theory Research Papers Series No. 10-33*, March 2011, <http://papers.ssrn.com/abstract=1799431>.

Steiner, C. (2012), *Automate This: How Algorithms Came to Rule Our World*, New York: Penguin.

Ziman, J. (ed) (2000), *Technological Innovation as an Evolutionary Process*, Cambridge: Cambridge University Press.