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SEARCHING FOR (AND FINDING) NEOCOLONIAL FANTASIES: SEXUALIZATION OF WOMEN FROM THE GLOBAL SOUTH AND THE GLOBAL EAST IN GOOGLE'S TEXT SEARCH RESULTS

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Background

Search engines (SEs) are major gatekeepers of public communication which determine how information is filtered and what sources are prioritized in response to specific queries (Germano and Sobbrío 2020). However, similarly to other complex algorithmic systems, SEs are prone to biases which can be broadly defined as the distortion of the information landscape, for instance, through a systematic skewness of results towards specific perspectives or the imbalances in the prevalence of specific sources (Bozdog 2013; Goldman 2008). Due to the high trust people put in SEs, the reiteration of social biases - the ones involving systemic misrepresentation of certain socio-demographic groups (Otterbacher, Bates, and Clough 2017) - via web search can amplify societal discrimination and exacerbate prejudices towards misrepresented groups.

The importance of social biases stresses the need for uncovering their presence in web search outputs to prompt search engine companies to debias the outputs (Noble 2018). One methodology commonly employed for this aim is algorithm impact auditing that investigates which algorithmic system outputs are prevalent and whether there is evidence of bias in them (Mittelstadt 2016). In this paper, we utilize this methodology to examine the presence of one specific form of social bias - that is, sexualization of people of different gender, nationality, ethnicity and religion - in Google's organic and sponsored text search results.

While sexualization in the representation of people has been extensively studied in the context of popular media (Ward 2016), the only analysis of this phenomenon in web

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search was done by Noble (2018). While this important work has examined representations of different ethnic groups in text search results, this examination was focused on the Global North context. We build on Noble's findings but look at the problem from a broader global perspective by systematically assessing whether there is evidence of sexualization of different national groups, including the ones coming from the Global South and the Global East.

Research Questions

We address the following Research Questions:

RQ1: Is there evidence of sexualization of different groups in sponsored search results?

RQ2: Are there discrepancies in the level of sexualization of different groups (women vs men as well as different national/ethnic/religious groups varies in organic text search results?

Data and Methods

To address the aforementioned points, we collected unpersonalized text search results from Google from the US and Ireland (using VPN) during the period from July, 21, 2020 to August, 5, 2020, in response to search queries referring to different groups of people. Each query consisted of a combination of a term denoting different national/ethnic/regional/religious groups (e.g., "Ukrainian" or "Black" or "Muslim") combined with one of the following seven terms describing gender/age groups: "people", "women", "men", "females", "males", "girls", "boys". The list of nationalities was based on the one provided by the UK government for company filings. We expanded it by adding several regional categories (e.g., "Eastern European") and ethnic categories as described in the Racial and Ethnic Categories for the NIH diversity program. It resulted in 1,694 queries used for data collection; examples include "Norwegian girls", or "Muslim women". The search results - organic and sponsored - in response to these queries were collected automatically, and served as the main data source for our analysis.

For the analysis, we relied on a mix of qualitative, quantitative and computational methods. To address RQ1 we first conducted a qualitative analysis of sponsored results, and then quantitatively assessed their prevalence for different queries. To address RQ2, we relied on word embeddings-based association analysis, similarly to previous studies that used word embeddings to quantify biased representations of different groups in texts (see Garg et al., 2018).

Findings

Regarding RQ1, we established that, first, most sponsored content is returned in response to search queries about women, especially those from the Global South and East; second, over 90% of the sponsored link to (racialized) dating and/or so-called "mail-order bride" websites that reinforce post-colonial sexist stereotypes (Lloyd 1999; Schaper et al. 2020).

Regarding RQ2, there are gender-based discrepancies in the levels of sexualization in both organic and sponsored search results. Women are sexualized more than men, and there are discrepancies in the levels of sexualization of different national groups, with women from the Global East and South being sexualized more than women from the Global North. Such a discrepancy leads to the reinforcement of sexist stereotypes and reiteration of the colonial fantasies which treat women outside the Global North as objects expected to be conquered.

Implications

Our findings show that post-colonial sexist stereotypes are pronounced in both sponsored and organic text search results on Google with women from Global South and Global East being highly sexualized. Regardless of the source of observed misrepresentations, they can be harmful for individuals and societies. Even if these biases do not introduce, but merely reflect existing stereotypes, they can further reinforce them since exposure to sexualized representations of people can increase sexist attitudes and have numerous adverse effects (Ward, 2016).

Our observations are important for the debate about the algorithmic fairness and its applicability to the Global South and East as they show that web search is embedded in existing power relationships resulting in unfair treatment of certain groups that can facilitate their exploitation. Our findings also highlight implications for the Google web search functionality and commercial model. Instead of prioritizing sexist results, the top organic search results related to more general queries should promote more neutral reference sources and outlets exposing stigmatization of vulnerable groups.

References

- Bozdog, Engin. 2013. "Bias in Algorithmic Filtering and Personalization." *Ethics and Information Technology* 15 (3): 209–27. <https://doi.org/10.1007/s10676-013-9321-6>.
- Garg, Nikhil, Londa Schiebinger, Dan Jurafsky, and James Zou. 2018. "Word Embeddings Quantify 100 Years of Gender and Ethnic Stereotypes." *Proceedings of the National Academy of Sciences* 115 (16): E3635–44. <https://doi.org/10.1073/pnas.1720347115>.
- Germano, Fabrizio, and Francesco Sobbrino. 2020. "Opinion Dynamics via Search Engines (and Other Algorithmic Gatekeepers)." *Journal of Public Economics* 187 (July): 104188. <https://doi.org/10.1016/j.jpubeco.2020.104188>.
- Goldman, E. 2008. "Search Engine Bias and the Demise of Search Engine Utopianism." In *Web Search: Multidisciplinary Perspectives*, edited by Amanda Spink and Michael Zimmer, 121–33. Information Science and Knowledge Management. https://doi.org/10.1007/978-3-540-75829-7_8.
- Lloyd, Kathryn A. 1999. "Wives for Sale: The Modern International Mail-Order Bride Industry Comments." *Northwestern Journal of International Law & Business* 20 (2): 341–68.
- Noble, Safiya Umoja. 2018. *Algorithms of Oppression: How Search Engines Reinforce Racism*. New York: New York University Press.

Otterbacher, Jahna, Jo Bates, and Paul Clough. 2017. "Competent Men and Warm Women: Gender Stereotypes and Backlash in Image Search Results." In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems*, 6620–31. CHI '17. <https://doi.org/10.1145/3025453.3025727>.

Schaper, Ulrike, Magdalena Beljan, Pascal Eitler, Christopher Ewing, and Benno Gammerl. 2020. "Sexotic: The Interplay between Sexualization and Exoticization." *Sexualities* 23 (1–2): 114–26. <https://doi.org/10.1177/1363460718790863>.

Ward, L. Monique. 2016. "Media and Sexualization: State of Empirical Research, 1995–2015." *The Journal of Sex Research* 53 (4–5): 560–77. <https://doi.org/10.1080/00224499.2016.1142496>.