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# Reinscribing gender: social media, algorithms, bias

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## Reinscribing gender: social media, algorithms, bias

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### ABSTRACT

This article reflects on an apparent paradox – in light of cultural shifts in gender, as well as a growing understanding of the multiplicity of gender, internet algorithms tend to reinforce dualist, hierarchical notions of gender. Algorithms exert profound influence on how gender is experienced, processed, and recirculated in contemporary consumer culture. Thus, while consumers and researchers embrace a broadening conception of gender, the online marketplace seems to be working to reinscribe stereotypical notions of gender. This paradox raises many important issues for research on gender and marketing.

### KEYWORDS

Algorithms; gender; social media; bias; sexism; consumer culture

Despite profound shifts in how gender identity is conceived, growing recognition, in many places, of the multiplicity of gender, and striking strides in research on gender and marketing, the technologies that underlie daily experience seem to be working to reinscribe gender, solidify the distinctions between male and female, and promote a dualistic realm via algorithms that depend on entrenched notions of what men and women want and need. Granted, Google's gender settings include Male, Female, Custom, and Rather Not Say. However, in practice, Google assigns dualistic categories of female or male in their Google Ad Personalisation Page, which influences what ads will be shown to users, with striking implications issues of choice, privacy and transparency (Nisha et al., 2019; see also Noble, 2018).

Google's image search also reflects cultural biases – search for CEO and images of white men dominate (Kay et al., 2015). Facebook, whose original mission was to make it easy for Harvard undergraduate's to rate female student's attractiveness (Kirkpatrick, 2011), continues to deploy dualistic gender categories throughout its platform (e.g., Bivens, 2017). Much algorithmic work, of course, occurs in the background, without consumer awareness. For gender researchers, the algorithmic relation to big data represents a crucial concern, particularly for its impact on consumer identity.

I reviewed several papers recently on representations of gender for advertising and media journals. All brought a nuanced conception of gender to bear on the shifting terrain of gender as it appears in advertising (see, e.g., Coffin et al., 2019; Schroeder & Borgerson, 2015). This work reflects a sense of 'undoing of gender' (Tissier-Desbordes & Visconti, 2019, p. 307), as described in a recent special issue on 'gender after gender' in *Consumption Markets & Culture*. In the last special issue on gender in this journal, the guest

editors suggested that ‘In contemporary consumer culture, however, these dualist categorisations and essentialist conceptualisations often break down and become problematized’. (Arsel, Eräranta & Moisaner, 2015, p. 1553). However, in the online world of algorithms, dualist, sexist categories dominant, recirculate, and propagate.

For example, one study created a basic ad that promoted STEM careers, with the text ‘Information about STEM careers’, along with a picture that depicted various STEM fields (Lambrecht & Tucker, 2019). They placed the ad on Facebook in 191 countries, and found that men saw the ad more than women, despite their efforts to make the ad ‘gender neutral’. The researchers conclude:

Women were far less likely to be shown the ad than men – but not because they were less

likely to click on it. If women ever saw the ad, they were more likely than men to click. Our finding suggests a nuanced view of the potential for apparent discriminatory outcomes even from “neutral” algorithms. (Lambrecht & Tucker, 2019, pp. 2977-2978).

Part of the explanation suggests that women are targeted with more ads for goods – the landscape of social media advertising reflects the notion that women ‘are likely to engage with advertising and because they traditionally control household expenses’ (Lambrecht & Tucker, 2019, p. 2976). This study offers more clues into how algorithms reinscribe gender, interacting with stereotypical notions about men’s and women’s career interests, online behaviour, and consumer preferences.

Moreover, algorithms have been shown to *learn* gender and incorporate gender biases, thus reflect damaging stereotypes about women. A recent study shows how gender figures in online reviews, including DVD reviews on Amazon and restaurant reviews of Yelp: ‘Utilizing data from millions of observations and a word embedding approach, GloVe, we show that algorithms designed to learn from human language output, also learn gender bias’. (Mishra et al., 2019, p. 17). This study reveals how algorithms pick up cultural biases and feed them back into the online environment, without much awareness from users of what is happening, or how their social media feed is built. They conclude:

First, we show that more female images are shown when the search-query is negative (e.g., impulsive shopper) than positive (e.g., sensible shopper). Second, we demonstrate that in the domain of product recommendation, biased recommendations can influence choices made by female consumers [...] Moreover, if these reviews are used to provide recommendations in the marketplace, it would result in women being recommended less career-oriented products e.g., less online courses, job advertisements, or even less paying jobs. (Mishra et al., 2019, p. 17)

In other words, algorithmic ‘choice’ may overwhelm consumer choice.

Algorithms make up a growing influence of the daily visual consumption of consumers. They influence what we read, what we see advertised, and ultimately what we buy. At a basic level, algorithms impact the visual world that online consumers inhabit each day. Marketing research is beginning to grapple with the implications of our algorithmically driven world. However, at the same time that gender has been recognised as fluid, dynamic, and multiple, algorithms often reinforce a dualistic, hierarchical, difference-based mode of gender. And that seems like a problem.

## Disclosure statement

No potential conflict of interest was reported by the author.

## Notes on contributor

*Jonathan E. Schroeder* is the William A. Kern Professor of Communications in School of Communication at Rochester Institute of Technology in New York. His research largely focuses upon the intersections of branding, identity, and visual culture. He is author or editor of nine books, including *Visual Consumption* (Routledge, 2002), *Brand Culture* (Routledge, 2005), *Designed for Hi-Fi Living: The Vinyl LP in Midcentury America* (MIT Press, 2017), and *Designed for Dancing: How Midcentury Records Taught America to Dance* (MIT Press, forthcoming).

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