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PERCEPTIONS OF ALGORITHMIC PROFILING ON FACEBOOK AND THEIR SOCIAL IMPLICATIONS

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Background and Research Questions

With every digital interaction, individuals are increasingly subject to algorithmic profiling, for example via targeted advertising on social media. Large Internet firms, such as Facebook and Google/Alphabet, as well as third-party data brokers collect and combine detailed personal data to create sophisticated profiles (Bach et al., 2019) used for predictive purposes. We understand profiling here as the systematic and purposeful recording and classification of data related to individuals (Büchi et al., 2019). Research has started to look into people's perception and engagement of algorithms (Bucher,

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2017; Duffy et al., 2017; Eslami et al., 2015; Klawitter & Hargittai, 2018). Notably, this research has shown that many users are unaware of the existence of algorithms, for example those which curate news feeds (Eslami et al., 2015), and that a majority feels uncomfortable with algorithmic profiling on Facebook (Hiltin & Rainie, 2019). In our research, we investigate perceptions of algorithmic profiling on Facebook by addressing the following questions: *What user narratives of profiling on Facebook exist? What reactions do users have when confronted with Facebook's inferred profiles? What are the social implications of user perceptions of profiling?*

Research Design

Relying on Prolific for participant recruitment and Qualtrics for the questionnaire design, we created an online survey in November 2019. We limited participation to active Facebook users in the US and obtained 292 valid responses. The survey included questions on demographics, privacy concerns, privacy-protection behavior, social media and Internet use, and an in-depth section on respondents' perception of profiling, based on Facebook's "Your interests" and "Your categories" sections in the Ad Preferences menu (Hiltin & Rainie, 2019). We used five open text boxes to elicit the narratives, imaginaries, and reactions to Facebook's algorithmic profiling. The data analysis is ongoing and for this contribution, we present the findings of a thematic analysis of the textual data as well as descriptive statistics for the closed questions.

Results and Discussion

To explore user narratives of profiling, we asked the following questions: *How do you think Facebook determines which ads to display to you?* and *What kind of data do you think Facebook has about you?* We analyzed the second question in more depth and extracted four key perceptions: a) uncertainty: respondents do not know what kind of data Facebook has about them and admit their lack of knowledge; b) naiveté: respondents think that Facebook only has the information they explicitly shared (no inferences); c) realism: respondents are aware that Facebook has information that goes beyond what is immediately visible; d) fatalism: respondents think that Facebook knows everything. Theme c) was most prevalent but a fair proportion of respondents fell into the b) and d) categories. Figure 1 shows a word cloud visualization for this question. The prominent role of "everything" and "know" implies narratives of Facebook as powerful and intrusive, as evidenced by individual quotes.

This is partly contrasted by the reaction to the actual displays of profiling. Using closed questions, we found that the perceived accuracy of "My Interests" was only moderate (3.30/5) and the same is true for "My Categories" (3.25/5). However, "My Interests" and "My Categories" differed in the level of perceived detail, measured by the question: *Is the number of interests/categories higher, lower, or about what you expected?* (separately asked for interests and categories after inspection of "My Interests" and "My Categories"). The number of interests listed tended to be higher than expected, whereas the number of categories listed tended to be lower than expected. The open-ended reactions to seeing "My Interests" and "My Categories" varied broadly, from not

surprised at all to shocked. Many respondents were surprised at how imprecise or even wrong some of the inferred interests and categories were. These findings paint a more differentiated picture than the initial narratives.

These findings have implications for research on algorithms from a user-centered perspective (Bucher, 2017; Duffy et al., 2017; Eslami et al., 2015; Klawitter & Hargittai, 2018). Particularly, they point to aspects of social exclusion and social justice, as users might differentially benefit or be disadvantaged from their digital traces (Micheli et al., 2018). If users have overly pessimistic imaginaries of algorithmic profiling, they might be excluded from opportunities the Internet and social media offer (Schradie, 2013). By contrast, if they have overly optimistic imaginaries of algorithmic profiling, they might fall prey to online fraud or abuse more easily (Madden et al., 2017). Thus, the findings connect to the debate about algorithmic literacy. Particularly, knowledge about profiling and algorithmic literacy could be associated with chilling effects that affect those at the margins most strongly, potentially leading to a society with less space for non-conformity and alternative lifestyles (Büchi et al., 2019). In a follow-up study to the research presented here, we aim to connect perceptions of profiling to chilling effects.

Figure 1. Users' perceptions of Facebook's data about them



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