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Using the Internet and social media platforms as a means of organising and mobilising social movements is cheap, quick, and effective for citizens, so much so that some governments have realised the risk and taken extreme preventive actions like shutting down the Internet completely or banning social media platforms with the aim of sabotaging these online social movements (OSM) (Kermani 2023). An OSM usually has an original hashtag (the flagship hashtag) that is used as the gateway to the public discourse on the focal OSM. An OSM and its flagship hashtag might be compromised by the existence of misleading hashtags that are generated mistakenly or deliberately as a countermovement. Misleading hashtags can look almost identical to the flagship hashtag of an OSM with a typographical error (Kermani 2023).

Many platforms, such as Google or social media platforms like Facebook and Twitter, have been using prompt-assisted autocomplete text fields for many years as a searching tool that dynamically shows recommendations concurrently as a user types a string (Lukyanenko et al. 2017). When misleading hashtags are created and trended on a platform like Twitter, the hashtag autocomplete system will recommend both the wrong and right hashtags to users as they type the hashtag characters. This may create a susceptibility for users to choose the wrong hashtag when they want to contribute to the OSM discourse. Thus, it is important to understand how users interact with such a system and how it may affect an OSM. Accordingly, this research aims to investigate *whether and how hashtag autocomplete systems can increase users' susceptibility to using the wrong hashtag in support of the OSM*.

Without the help of a hashtag autocomplete system, we would require learning to spell a hashtag to be able to use it later. A hashtag can be considered a pseudoword, and the acquisition of a hashtag orthography can be analogous to acquiring a written word in learning languages. Drawing on Orthographic learning (i.e., the process of learning written words), research shows that even children are capable of learning to spell pseudowords in a self-taught manner, and the exposure time and context can facilitate this process (Li et al. 2021). This means that anyone should be able to learn to spell and type a hashtag without the assistance of a hashtag autocomplete system if they are exposed to that hashtag enough. In this regard, extended exposure to OSM discourse is likely to facilitate orthographic learning of hashtags and enable users to use them correctly when creating content on social media. Accordingly, this study posits:

H1. The extent of exposure to the discourse on an OSM decreases the susceptibility to choose the wrong hashtag when contributing to the discourse.

In the presence of a hashtag autocomplete system, how could individuals choose the wrong hashtag even when they have already learned to spell it correctly? To answer this question, we

refer to statistical learning. Statistical learning plays an important role in the perceptual processing of the human brain, and as a result, in our reading (Frost et al. 2019). Statistical learning relies on distributional regularities of the sensory information, and once this learning is assimilated to long-term representations in our memory, our brain uses them for rapid word recognition (Chetail 2017; Frost et al. 2019). Thus, users might easily and quickly overlook minimal typographical errors in a hashtag and believe that they used the right hashtag due to such perceptual processing in their brains. Accordingly, when both the flagship and misleading hashtags are suggested to the user, it is likely that the user would be more susceptible to using the wrong hashtag by relying on the assistance of the hashtag autocomplete system. Accordingly, this study proposes the following hypothesis:

H2. Relying on users' cognitive memory reduces the susceptibility to choose the wrong hashtag as opposed to exposure to misspelt hashtags recommended by the hashtag autocomplete.

To test the proposed hypotheses, an online experiment with a between-subject 2x2 factorial design is planned to be conducted. The overall experimental design is shown in Figure 1. Around 300 participants will be recruited from Amazon Mechanical Turk (including the pilot respondents), who will be compensated for their time according to the payment norms on the platform. Data will be analysed using ANOVA.
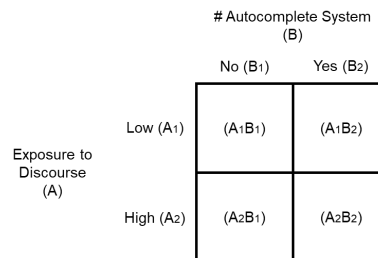

Figure 1. Outline of a 2 x 2 Factorial Design for the Online Experiment

This paper will contribute to the literature by providing an understanding of how users interact with a hashtag autocomplete system and whether this system could undermine OSMs.

References
Chetail, F. 2017. "What Do We Do with What We Learn? Statistical Learning of Orthographic Regularities Impacts Written Word Processing," Cognition (163), Elsevier, pp. 103–120.
Frost, R., Armstrong, B. C., and Christiansen, M. H. 2019. "Statistical Learning Research: A Critical Review and Possible New Directions.," Psychological Bulletin (145:12), American Psychological Association, p. 1128.
Kermani, H. 2023. "#MahsaAmini: Iranian Twitter Activism in Times of Computational Propaganda," Social Movement Studies, Taylor & Francis, pp. 1–11.
Li, Y., Wang, M., and Espinas, D. 2021. "Orthographic Learning through Self-Teaching among Learners of English as a Second Language," *Reading and Writing* (34:5), Springer, pp. 1295–1320.
Lukyanenko, R., Parsons, J., Wiersma, Y., Wachinger, G., Huber, B., and Meldt, R. 2017. "Representing Crowd Knowledge: Guidelines for Conceptual Modeling of User-Generated Content," Journal of the Association for Information Systems (18:4), p. 2.