Online-Offline Spillovers.
Potential real-world implications of online manipulation.

People's online behavior often differs from their offline behavior. Research has shown that offline behavior may shape online personas. This project, a collaboration between the Department of Informatics and TUM School of Governance at TUM, analyzes the previously unexplored opposite question of whether online behavior spills over to the offline world.

Against the background of recent societal debates about fake news and online manipulations, this question deserves attention. In the project, the following research questions are addressed: How do online experiences affect offline behavior? And what mediates the respective effects? To this end, the research team employs experiments in the laboratory and in the field that address the question of whether and how online content influences people's beliefs. The intention is to be able to suggest measures that may help to mitigate tendencies for political polarization on social media.
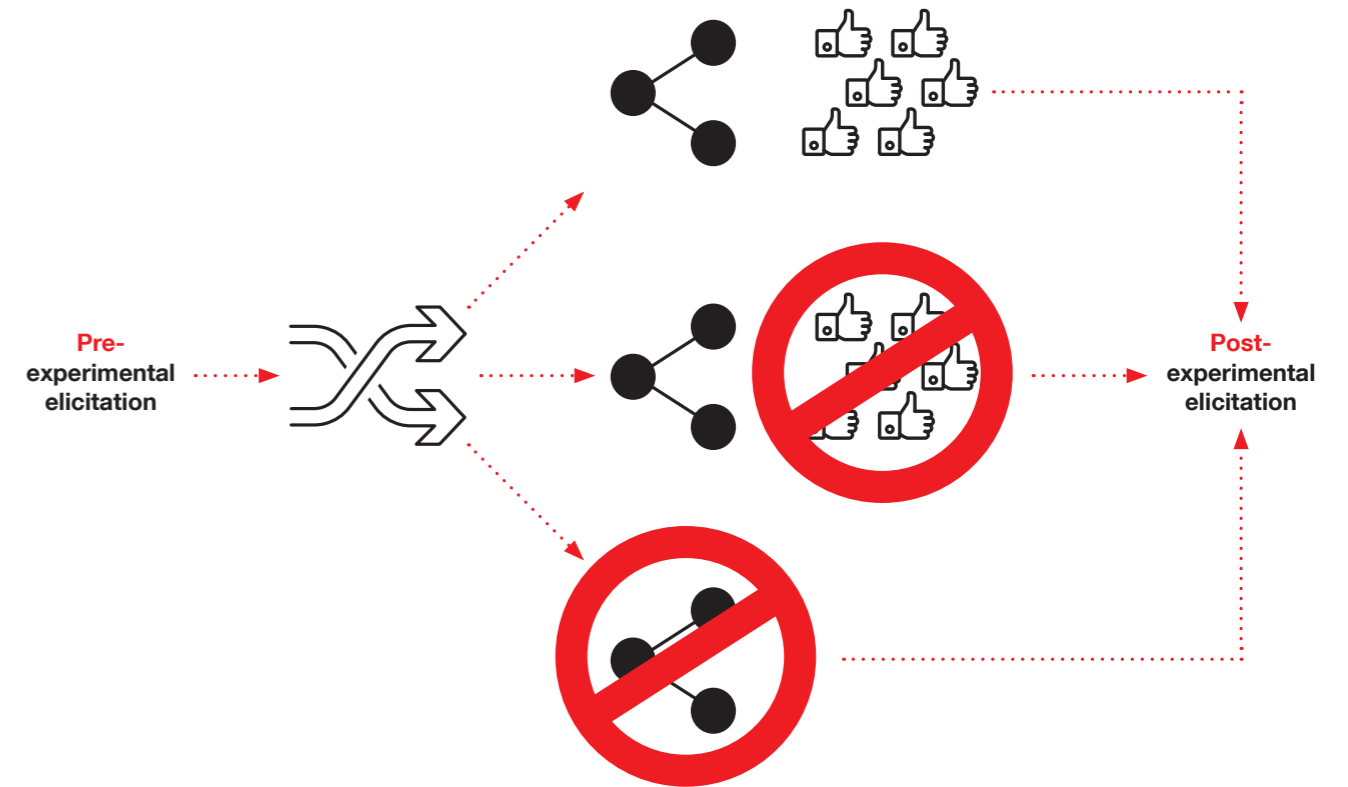
Extremist and radical online content, for instance, can radicalize user's behavior, but it is unclear whether and under which circumstances it can also change user's attitudes and beliefs. In 2020, a study conducted as a Master's thesis measured how emotionally demanding reading radical posts can be, in order to assess whether such activity can influence user's attitudes on an affective level, using heart rate variability (HRV) as a measure of emotional load. A low HRV indicates persisting mental, cognitive or emotional stress. In the laboratory, a first set of 23 subjects were presented with radical posts (test condition) and neutral posts (control condition) on Facebook. During the whole process, the heart rate of participants was measured with wearable heart rate monitors.

The team found that

▷ the initial data obtained tends to support the hypothesis that users would, on average, show a higher heart rate and lower heart rate variability (more mental, cognitive or emotional stress) when presented with radical posts. However, more subjects are needed to obtain scientifically significant results. This is the task for 2021.

Plans for 2021

In 2021, the team will conduct a large-scale experiment on Twitter that will represent the core of the project. Participants will be randomly assigned to one of three treatments (see figure). In each treatment, subjects will be asked the same questions about their political attitudes at two points in time. The treatments that the subjects are exposed to vary in terms of opinions they are asked to tweet about and feedback they receive. The expectation is that political polarization will be higher under circumstances where the subject is asked to interact more actively with the content. ●

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