

An Empirical Investigation of Chilling Effects Induced by Workplace Software

Master's Thesis/Guided Research

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Context

In modern workplaces, software products to facilitate collaboration and project management activities are prevalent. Especially with the ongoing COVID-19 pandemic, their adoption exploded in order to facilitate remote work. While this digitalisation boom is integral to ensuring continuous work in a situation of necessity, the hasty introduction inhibited a thorough investigation of potential negative impact on employees. This thesis researches if and how office workers' behaviour is negatively impacted by workplace software.

Concretely, we have a look at *chilling effects*, which are the deterrence of legal behaviour or the production normatively conforming behaviour of people as a result of (potential or real) surveillance and fear of negative repercussions. Originating from legal scholarship, the concern with chilling effects is the deterrence of people to pursue their legal and democratic rights (such as freedom of speech or self-determination) through (perceived) uncertainty of laws and state surveillance [7]. In the digital domain, this materializes in form of inhibited expression on social media platforms, online search behaviour or reading of Wikipedia articles as a reaction to surveillance such as revealed by the NSA scandal or fuzzy laws to regulate speech online [8, 9]. With constant data collection and analysis in online contexts, surveillance through data traces (dataveillance) elevates the issue [1, 2]. Studies have shown that the suggestion of being surveilled alone, leads to chilling effects [7].

Workplace software exhibits ample functionalities suggesting surveillance in form of collected and/or stored data traces. As resulting chilling effects, one can imagine being chilled from uttering a controversial opinion or critique even in a private chat, feeling compelled to work long hours documented by one's online status and message time stamps or feeling pressured to adjust one's private space and appearance to social expectations during video conferences. Chilling effects can impact employees' well-being and autonomy [2], which can in turn negatively impact the quality of their work. Furthermore, criticism might be inhibited leading to a reduction of plurality and more coherent opinions, which ultimately diminishes the quality of the company's product or service [7].

While those effects can occur through general fear in a work environment [13], this thesis sets out to study if and how those effects occur or are amplified through the impact of software. Chilling effects being conceptually still fuzzy and empirically highly under-researched, this thesis aims to contribute to closing this research gap empirically in the context of workplace software. Gained insights help to increase the understanding of chilling effects and inform future software engineering processes by pointing to functionality, which should be redesigned in the future.

Goal

The goal of this thesis is to qualitatively study if and how chilling effects are evoked through workplace software. Literature on digital workplace privacy and surveillance raises similar concerns [6, 11, 12], however, to the best of our knowledge there is no prior work to systematically study the effect of certain software functionality on chilling effects of employees. By the means of a mixed-method study of a technical walkthrough and semi-structured interviews [10, 4], this work aims to shed light on what software features (i.e., affordances) exactly might or do lead to chilling effects of employees. Conversely, this study has to also be aware of employees' attempt to subvert such affordances, which would suggest that employees fight for their autonomy and self-determination [3, 5].

Theoretical Research Chilling effects are mainly theoretically researched in legal scholarship and empirical research just starts to be conducted [7]. Drawing from the research body on workplace privacy and surveillance issue [6, 11, 12], this thesis combines first transfers the concept of chilling effects to the workplace domain.

Mixed-method empirical research Based on this theoretical foundation, a two-step mixed-method study is conducted, which is inspired by previous work on the influence of platform affordances on gig-workers [10, 4], to determine the impact of workplace software on office workers. First, a systematic *software walkthrough* of one or two chosen workplace tools is conducted, which examines the environment and the structure of the software in detail [3, 5]. Based on the insights gained from the first study, semi-structured interviews with office workers are conducted.

Prototypical exploration of alternatives By drawing from the insights gained during the theoretical and empirical investigation, alternatives to the identified problematic affordances are suggested. This means, that design patterns are suggested, which might inhibit some forms of chilling effects in the future or that the same functionality is implemented in a different way, which reduces the potential for chilling effects. Insights from theory, empirical research, and developed prototypes are integrated in a concluding discussion.

Work Plan

1. Familiarise yourself with the theory of chilling effects and concepts of conformity and self-censorship in professional contexts.
2. Choose one or two workplace tools as a study object.
3. Conduct a systematic software walkthrough in order to identify potential threats and problematic technological affordances.
4. Based on the findings design an initial taxonomy of threats and affordances for chilling effects.
5. Develop an interview schedule based on this taxonomy.
6. Conduct interviews with employees/working students to identify their mental model of surveillance and adapted behaviour.
7. Code and evaluate the interviews.
8. Develop alternative practices, which fulfill similar goals but avoid the functionality, which causes chilling effects as far as possible.
9. Combine theoretical and empirical insights to a discussion.

Deliverables

- Taxonomy of potential technological affordances for chilling effects
- Interview schedule and developed codes
- Prototypical realisation (either in form of an implementation or architecture models)
- Final thesis report written in conformance with TUM guidelines.

Requirements

Given the need for an adequate sampling strategy of interview partners, please include in your application how you plan to recruit around 15-20 working interview partners for this study. It is recommended that you have a position as a working student so that you can interview your colleagues. Alternatively, you might also interview former colleagues or have a wide outreach to professionals on LinkedIn.

References

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