



May 29, 2021

Before the  
Federal Trade Commission  
Washington, D.C.

### Dark Patterns

Thank you for the opportunity to provide comments on digital dark patterns. We write to respond to the questions asked by the FTC in the request for public comments in connection with the recent FTC workshop: “Bringing Dark Patterns to Light.”

We are academic researchers associated with the University of Chicago. We draw on our collective experience in computer science and law to encourage the Commission to take specific steps to protect internet users and to conduct further studies about how digital dark patterns are used across a range of platforms. We look forward to further opportunities to engage with the Commission’s staff to answer any questions.

#### **1. Measuring the prevalence of all possible dark patterns at scale using automated data collection versus self report**

Measurement at scale is a major obstacle for dark patterns researchers. Recent work has shown success in automated dark patterns detection. In our prior work, we created an automated web scraper to find dark patterns on 11k shopping websites.<sup>1</sup> The shopping industry proved feasible for such a study because of the similarities in the design of shopping websites. The feasibility of such tools is industry dependent. In many industries, such as social media platforms, the variance in website interfaces makes web scraping approaches infeasible. As a result, researchers often conduct manual inspection of interfaces. For instance, in our study of dark patterns in social media websites, we had to manually scrape and take screenshots of deletion interfaces on three modalities (mobile browser, mobile app, desktop browser) to understand how

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<sup>1</sup> Mathur et al. *Dark Patterns at Scale: Findings from a Crawl of 11K Shopping Websites*. ACM Conference on Computer-Supported Cooperative Work and Social Computing 2019. <https://arxiv.org/pdf/1907.07032.pdf>

deletion works on each platform.<sup>2</sup> This also required creating and deleting an account on each access medium using separate email addresses for each account. For this reason, we limited our analysis to the top 20 social media websites in the United States according to Tranco listings<sup>3</sup>. Given that certain interfaces with a high degree of similarity lend themselves to automated data collection and others do not, the agency should consider that creating datasets of prevalent dark patterns will be dependent on researchers' resources.

Therefore, we believe a necessary step to combating digital dark patterns is not to rely on automated data collection of dark patterns alone. Instead, the agency could also do more to make easy reporting systems that can help document cases of dark patterns in a systematic way. Such a system could take inspiration from existing unofficial reporting systems such as the darkpatterns.org Hall of Shame<sup>4</sup>, Dark Patterns Tip Line<sup>5</sup>, and reddit's r/assholedesign<sup>6</sup>. While important, reporting systems may not be enough. We also believe that awareness needs to be increased about any reporting systems and dark patterns in general to help the agency understand how dark patterns affect a broader range of users.

## 2. What dark patterns experiments have taught us and can teach us

One promising approach to study the effects of dark patterns is to perform experimental studies. Experiments have the ability to put users in a more realistic experience to show the impact dark patterns may have on the users. For example, Luguri and Strahilevitz used A-B testing to measure the rate in which participants enrolled in a (fake) identity theft protection plan, simulating the kind of dark patterns that consumers encounter online.<sup>7</sup> Participants could opt out by navigating through varying degrees of dark interfaces. They found that enrollment rates increased with the aggressiveness of the dark patterns to which they were exposed. They also found that hiding relevant information, making consumers go through more steps to reject the plan than to accept it, using confusing prompts with double negatives, and employing

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<sup>2</sup> Neha Lingareddy, Brennan Schaffner, and Marshini Chetty. *Can I Delete My Account?: Dark Patterns In Account Deletion on Social Media*. CHI Worksop: What Can CHI Do About Dark Patterns? 2021. (April 2021). [https://drive.google.com/file/d/190uWk2bhJngE0J\\_K\\_kGt2v91z\\_f01Ocz/view](https://drive.google.com/file/d/190uWk2bhJngE0J_K_kGt2v91z_f01Ocz/view)

<sup>3</sup> Victor Le Pochat, Tom Van Geothem, Samaneh Tajalizadehkoob, Maciej Korczynski, and Wouter Joosen. 2020. *Tranco: A Research-Oriented Top Sites Ranking Hardened Against Manipulation*. Retrieved November, 2020 from <https://tranco-list>.

<sup>4</sup> <https://www.darkpatterns.org/hall-of-shame>

<sup>5</sup> <https://darkpatternstipline.org/>

<sup>6</sup> <https://www.reddit.com/r/assholedesign/>

<sup>7</sup> Jamie Luguri, Lior Jacob Strahilevitz, Shining a Light on Dark Patterns, *Journal of Legal Analysis*, Volume 13, Issue 1, 2021, Pages 43–109, <https://doi.org/10.1093/jla/laaa006>

social proof strategies to generate bandwagon effects caused significant increases in the percentage of consumers enrolling in the protection plan. An experimental design was able to quantify the impact of dark patterns, identify those most susceptible to them, and identify which dark patterns were most likely to impact user decision-making. Indeed, the study showed that confusing dark pattern prompts could get many users to sign up for an identity theft protection plan without realizing that they had done so.

Luguri and Strahilevitz's research suggests that market forces do not deter the use of effective dark pattern strategies. While firms that employ multiple, heavy-handed dark patterns apparently experience customer backlash, firms that use a few highly effective dark patterns in subtler ways evidently will not prompt many consumers to take their business elsewhere. Some dark patterns, such as hiding information about a service's cost, even seem to increase the short-term satisfaction of users who are manipulated into signing up for the service. While more research would be welcome, the available evidence suggests that vigorous regulation of dark patterns is warranted to address a market failure that is prompting dark patterns to proliferate. In addition, the researchers found that "Decision architecture, not price, drove consumer purchasing decisions." In other words, whereas dark patterns significantly increased the percentage of consumers accepting the plan, quadrupling the monthly price had no significant effect.

The most convincing dark pattern experiments would involve A-B testing of design features on the actual websites and apps of firms that are genuinely trying to sell consumers products and services or to obtain their personal information. Independent academic researchers will have a difficult time convincing firms to facilitate that kind of A-B testing and publicize the results. Luguri and Strahilevitz therefore propose that the FTC use its consent decree process or other regulatory tools to require firms that may have behaved unlawfully to submit to dark pattern audits. Under such a regime, firms that had previously engaged in unfair or deceptive practices in trade would agree to provide the FTC or academic researchers working with the FTC with opportunities to study how altering problematic design features would affect consumer behavior and consumer welfare. These audits may be especially illuminating as researchers and the FTC endeavor to understand the effects of dark patterns on vulnerable populations.

### **3. Lack of user options constitute additional dark patterns.**

As noted, we performed a systematic screenshot analysis of the account deletion process on 20 popular social media platforms from mobile applications, mobile

browsers, and desktop browsers.<sup>8</sup> In addition to several well-researched dark patterns (confirmshaming, forced work, immortal accounts, etc.), we found numerous examples where deletion options were not given to users on mobile apps and browsers. Only 4 of the 20 platforms allow for account deletion from each of the access mediums we studied (mobile applications, mobile browsers, and desktop browsers). Desktop users have the most deletion options (16 out of 20). Although, some platforms (2/20) allow deletion via *only* their mobile application. It is likely that fewer users will leave a platform if they are unable to do so on their primary access medium. Further, some users may not have access to a desktop browser but still may want to delete their account. This kind of obstruction treats people with different levels of resources unfairly. Given that lower-income users may be on mobile-only devices, we recommend that platforms should be required to provide users with an option to create and delete accounts from all access mediums.

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As platforms use dark patterns to increase user engagement, data collection, and financial gain, the FTC can serve as an important source of protection for internet users. Our research shows that the FTC can aid users by raising awareness about dark patterns, creating better reporting mechanisms for systematic documentation of the harms of dark patterns, and identifying those dark pattern strategies that are most injurious to consumers' welfare. At the same time, our research also suggests that market forces alone are unlikely to prevent the harms associated with dark patterns. Rather, meaningful regulation is necessary to protect consumer autonomy and welfare. We are available to assist the FTC towards the goal of protecting user autonomy amidst dark interfaces.

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<sup>8</sup> Neha Lingareddy, Brennan Schaffner, and Marshini Chetty. *Can I Delete My Account?: Dark Patterns In Account Deletion on Social Media*. CHI Worksop: What Can CHI Do About Dark Patterns? 2021. (April 2021). [https://drive.google.com/file/d/190uWk2bhJngE0J\\_K\\_kGt2v91z\\_f01Ocz/view](https://drive.google.com/file/d/190uWk2bhJngE0J_K_kGt2v91z_f01Ocz/view)

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