



June 2021

# The Stakes of User Interface Design for Democracy

*Ellen P. Goodman and Karen Kornbluh*

*with contributions by Eli Weiner*

## Summary

The January 2021 insurrection at the U.S. Capitol demonstrated that rampant disinformation and conspiracy theories pose an existential threat to American democracy. GMF Digital has documented why the social media platforms' strategy of taking down content after it has gone viral is an ineffective response. This game of whack-a-mole fails to address the upstream platform design elements that enable disinformation campaigns to manipulate users, amplifying the salacious lie over the accurate report. Platforms themselves seem to be realizing the need for a new approach, implementing some new measures to slow virality and stop repeat offenders from spreading disinformation.

What remains, though, is a communications medium plagued by “deceptive design” of the user experience (UX)—one that makes it easy to manipulate consumers. The authors propose to replace “deceptive design” with empowering or “democratic design.” This paper and a companion paper by Caroline Sindors explain neutral design principles, how they are exploited to manipulate users, how they might instead be used to empower users, and how regulators can take account of design in their actions. These recommendations fit within a larger framework of revising and enforcing outmoded rules; encouraging the platforms to adopt a code of conduct to increase transparency and slow virality of disinformation; and empowering trustworthy civic information “infrastructure.”

It is well understood in the industry that design heavily influences how users interact with social media apps, websites, or search engines. Design choices such as color and font, the size and placement of action buttons, and the number of steps required to execute an action—what can be called design friction—all shape the UX and what information people absorb and release. Digital platforms and service providers shape the UX in ways that can be respectful of user autonomy and advance accurate, high-quality information, or in ways that subvert user choice and promote deception.

Regulators have incorporated design best practices in a number of offline policies. This paper surveys key examples of such, ranging from emissions labels on cars to health warnings on cigarette packs. These offline regulations were guided by design principles; design best practices should inform online policy as well. The authors detail how labels, interstitials, and virality disrupters can serve as speedbumps for viral content—allowing platforms the time to moderate appropriately and users the opportunity to gain more context. This paper contextualizes the authors' recommendation for a “circuit breaker”—a mechanism that would arrest the velocity of viral content to provide platforms with the opportunity for content moderation. If yoked to the public interest, UX design can be a powerful tool in promoting productive citizen engagement on digital platforms.

## Design Principles

Evidence-based research has identified basic digital design best practices involving navigation, text, color, and screen placement. A companion piece to this paper discusses more general design principles, while the focus here is on those design fundamentals as they apply to the digital user experience (UX). These best practices are value-neutral, however; they can be deployed as easily to deceive and exploit as they can be to inform and respect.

Leading design experts Jakob Nielsen and Ben Schneiderman emphasize basic principles of UX digital design that privilege ease of use and seek to reduce the cognitive load on users.<sup>1</sup> They emphasize that design should give users enabling navigation tools, such as “go back” and “undo” buttons.<sup>2</sup> According to the “three-click-rule,” it should not take more than three clicks to navigate to a desired location. Each additional click offers the opportunity for users to deviate from their initial intent, frustrating user agency. While some have argued against the utility of the rule,<sup>3</sup> others maintain that the concept can be a useful reminder to design intuitively, so that tasks take as few steps as possible while letting users know where they are, where they are going, and how to get there.<sup>4</sup>

The use of efficient and consistent design language across webpages, apps, and functions increases user

efficiency and comfort.<sup>5</sup> Graphic indicators help to minimize the cognitive demands placed on users.<sup>6</sup> Research shows that text should be of sufficient contrast with background and of sufficient size to be noticed and read with ease.<sup>7</sup> Apple, for instance, encourages developers to use 11-point font or higher.<sup>8</sup> Several studies support the use of sans-serif fonts.<sup>9</sup> MIT researchers have found that larger font sizes outperform smaller ones, regular width outperforms condensed width, and uppercase letters outperform lowercase.<sup>10</sup>

Color can be deployed strategically, making information more prominent and aiding in recall, while the consistent use of color can signal meaning for users.<sup>11</sup> Warmer colors, like reds and yellows, are perceived as both brighter and closer to the user.<sup>12</sup> The location of items on the screen can also signal the importance and relationship of information fragments. Design

1 Nick Babic, “[The Four Golden Rules of UI Design](#),” Adobe Ideas, October 7, 2019; Jakob Nielsen, “[10 Usability Heuristics for User Interface Design](#),” Nielsen Norman Group, April 24, 1994, updated November 15, 2020; Ben Schneiderman, “[The Eight Golden Rules of Interface Design](#),” from Schneiderman et al., *Designing the User Interface: Strategies for Effective Human-Computer Interaction*, Sixth Edition, Pearson, May 2016; James Kalbach, *Designing Web Navigation: Optimizing the User Experience*, O’Reilly, 2007, 157; Rex Hartson and Pardha S. Pyla, *The UX Book: Process and Guidelines for Ensuring a Quality User Experience*, Elsevier, January, 2012, Chapter 22.

2 Nielsen, “[10 Usability Heuristics for User Interface Design](#)”; Schneiderman, “[The Eight Golden Rules of Interface Design](#).”

3 For example, Paige Laubheimer, “[The 3-Click Rule for Navigation Is False](#),” Nielsen Norman Group, August 11, 2019; Joshua Porter, “[Testing the Three-Click Rule](#),” UIE, April 16, 2003.

4 For example, Jeffrey Zeldman, *Taking Your Talent to the Web: A Guide for the Transitioning Designer*, New Riders, May 2001, 97-98; Babic, “[The Four Golden Rules of UI Design](#).”

5 Don Norman, *The Design of Everyday Things*, Basic Books, 2013, Chapter Four; General Services Administration, “[User Interface Design Basics](#),” Usability.gov, accessed January 7, 2020.

6 Nielsen, “[10 Usability Heuristics for User Interface Design](#)”; Schneiderman, “[The Eight Golden Rules of Interface Design](#)”; Babic, “[The Four Golden Rules of UI Design](#).”

7 Aliaksei Miniukovich et al., “[Design Guidelines for Web Readability](#),” DIS ’17: Proceedings of the 2017 Conference on Designing Interactive Systems, June 2017.

8 Apple, “[UI Design Dos and Don’ts](#),” accessed January 7, 2020.

9 See generally Berrin Dogusoy, Filiz Cicek, Kursat Cagiltay, “[How Serif and Sans Serif Typefaces Influence Reading on Screen: An Eye Tracking Study](#),” in Marcus A. (ed) *Design, User Experience, and Usability: Novel User Experiences*. DUXU 2016; Sheree Josephson, “[Keeping Your Readers’ Eyes on the Screen: An Eye-Tracking Study Comparing Sans Serif and Serif Typefaces](#),” *Visual Communication Quarterly* 15, 2008. Other studies suggest there is no difference in readability between serif and sans serif fonts. See Hassan Soleimani and Elham Mohammadi, “[The Effect of Text Typographical Features on Legibility, Comprehension, and Retrieval of EFL Learners](#),” Canadian Center of Science and Education, July 11, 2012; and Aries Arditi and Jianna Cho, “[Serifs and font legibility](#),” *Vision Research* 45:23 (November, 2005).

10 Ben D. Sawyer et al., “[The Cost of Cool: Typographic Style Legibility in Reading at a Glance](#),” Proceedings of the Human Factors and Ergonomics Society Annual Meeting 61: 1, (September 2017).

11 Christof Kuhbandner and Reinhard Pekrun, “[Joint effects of emotion and color on memory](#),” *Emotion* 13:3, (2013).

12 Usability.gov, “[Color Basics](#),” accessed April 27, 2021; Dmitry Fadeyev, “[Using Light, Color and Contrast Effectively in UI Design](#),” August 14, 2008.

tenets of proximity and visual hierarchy affect how users interpret relationships between objects—the closer together items are, the more connected they seem to be.<sup>13</sup> The use of bold and nonbold text can serve a related function, grouping objects together and conferring a shared status (such as unread and read emails).<sup>14</sup>

***Dark patterns commandeer design principles to confuse, frustrate, and mislead users into acting against their interests.***

Real-world studies have confirmed the importance of these UX design choices. For example, one study conducted experiments with more than 80,000 users on a German website to analyze how design choices influenced interaction with consent notices. This found that users were more likely to interact with a notice displayed in the lower left of the screen, were more likely to click “Accept” when a button was pre-highlighted, and tended to make binary decisions about whether to accept or decline even when given more granular options.<sup>15</sup>

## Dark Patterns

The findings briefly outlined above can be used as easily to manipulate users as to empower them; in the former case design choices may be called “dark patterns.” Coined by Harry Brignull in 2010, the term describes manipulative design choices that make users do or believe things (enrolling in mailing lists, accepting cookies, succumbing to conspiracy theories pushed at them) that they did not initially intend.<sup>16</sup>

Dark patterns commandeer design principles to confuse, frustrate, and mislead users into acting against their interests. With persistent pop-up messages, labyrinthine click-through pages, countdown timers, and overly broad requests for user information, what these patterns share is manipulation by design.<sup>17</sup>

Because these designs can do damage to consumer rights and user privacy, EU and California state law have taken steps to address them. The EU’s General Data Protection Regulation (GDPR) states that “[s]ilence, pre-ticked boxes or inactivity [does] not therefore constitute consent.”<sup>18</sup> The California Consumer Privacy Act (CCPA) states that “agreement obtained through use of dark patterns does not constitute consent.”<sup>19</sup> A failed privacy bill in Washington state nearly mirrored the CCPA’s definition of consent and echoed its explicit prohibition on dark patterns.<sup>20</sup> Draft legislation at the U.S. federal level aims at curtailing dark patterns.<sup>21</sup> The U.S. Federal Trade Commission held a workshop on dark patterns in April to improve the term’s definition and survey possible responses.<sup>22</sup> Commissioner and former acting chair Rebecca Kelly Slaughter has observed that the Internet has “substantially exacerbated [dark patterns] and made them less visible to consumers.” She went on to say that “[u]

13 Lowdermilk, *User-Centered Design*, 63-64; Robin Landa, *Graphic Design Solutions*, Sixth Edition, Cengage, 2019, 343; Jeff Johnson, *Designing with the Mind in Mind*, Second Edition, Elsevier, 2010, 11-15.

14 Johnson, *Designing with the Mind in Mind*, 14.

15 Christine Utz et al., “(Un)informed Consent: Studying GDPR Consent Notices in the Field,” in 2019 ACM SIGSAC Conference on Computer and Communications Security, November 11–15, 2019.

16 Darkpatterns.org, “About Us.”

17 Mathur et al., “[Dark Patterns at Scale: Findings from a Crawl of 11K Shopping Websites](#)”; Commission nationale de l’informatique et des libertés, [Shaping Choices in the Digital World](#), January 2019, 28.

18 EU General Data Protection Regulation (GDPR): Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), OJ 2016 L 119/6.”

19 [California Consumer Privacy Act of 2018](#), as amended by the California Privacy Rights Act of 2020, November 20, 2020. For extended commentary see Christopher W. Savage, “[‘Dark Patterns’ Make Their Appearance in California’s New Privacy Law](#),” Davis Wright Tremaine, LLP.

20 Washington State Legislature, S.B. [5062](#), 2021 Session.

21 S. 1084, “[Deceptive Experiences To Online Users Reduction](#) (DETOUR) Act, 116th Congress, April 9, 2019. The DETOUR Act will be reintroduced in the 117th Congress. See more recently S. 4626, “[Setting an American Framework to Ensure Data Access, Transparency, and Accountability](#) (SAFE DATA) Act, Section 206, 116th Congress, September 17, 2020.

22 Federal Trade Commission, “[Bringing Dark Patterns to Light: An FTC Workshop](#),” April 29, 2021.

nderstanding the effect of that is really important to us as we craft our strategy for the digital economy.”<sup>23</sup>

Researchers have defined dark patterns variously as interfaces that attempt to “guide end-users into desired behaviour through malicious interaction flows,”<sup>24</sup> “nudges ... against the user’s own interest,”<sup>25</sup> and designs “that obfuscate interface elements that could ... protect user privacy.”<sup>26</sup> A study of digital dark patterns concluded that they “are strikingly effective in getting consumers to do what they would not do when confronted with more neutral user interfaces.”<sup>27</sup> Examples of such dark patterns abound.<sup>28</sup> They can be used to circumvent such regulations as the GDPR requirements for obtaining user consent for personal data collection.<sup>29</sup> One study focusing on U.K. users found that less than 12 percent of examined websites satisfied the GDPR consent requirements.<sup>30</sup> Shopping websites are riddled with dark patterns and there are dozens of third-party entities that will implement dark patterns in websites as a service.<sup>31</sup> Dark patterns appear to exist on 95 percent of popular Android apps.<sup>32</sup>

Researchers are iterating on Brignull’s initial taxonomy, finding new dark patterns,<sup>33</sup> exploring designers’ motivations for implementing them,<sup>34</sup> and investigating the patterns’ prevalence “in the wild.”<sup>35</sup> Among the dark patterns commonly deployed on social media is “sneaking”, which has been defined as “attempting to hide, disguise, or delay the divulging of information that is relevant to the user.”<sup>36</sup> In previous work, we have identified how purveyors of misinformation and disinformation bury their identity in fake accounts and “trojan horse” sites. The latter are sites that leverage the trust and credibility of what appear to be local newspapers as cover for spreading conspiracy theories and lies.<sup>37</sup>

### Design Thinking in Regulation

Design is central to how platforms can produce or reduce online harms. Policymakers need to incorporate design thinking into the rules they develop and the self-regulation they encourage. The companion piece to this paper provides a case study from Europe on the failure of the GDPR to adopt design thinking and shows how regulated entities are able to exploit this oversight to evade compliance with mandatory disclosures.<sup>38</sup>

- 
- 23 Sara Morrison, “[Dark patterns, the tricks websites use to make you say yes, explained](#),” Recode, April 1, 2021.
- 24 Midas Nouwens et al., “[Dark Patterns after the GDPR: Scraping Consent Pop-ups and Demonstrating their Influence](#),” Conference on Human Factors in Computing Systems, April 25–30, 2020.
- 25 Forbruker Rådet, Deceived by Design, June 28, 2018, 7.
- 26 Mark Leiser, “[Dark Patterns: the case for regulatory pluralism](#),” LawArXiv, July 16, 2020.
- 27 Jamie Luguri and Lior Jacob Strahilevitz, “[Shining a Light on Dark Patterns](#),” Journal of Legal Analysis 5 (March 29, 2021). See also Ryan Calo, “[Digital Market Manipulation](#),” George Washington Law Review 82 (August 2014).
- 28 Caroline Sindors, Designing Against Dark Patterns, German Marshall Fund of the United States, July 2021.
- 29 EU General Data Protection Regulation (GDPR): Regulation (EU) 2016/679 OJ L 119/6.”
- 30 Nouwens et al., “[Dark Patterns After the GDPR](#).”
- 31 Arunesh Mathur et al., “[Dark Patterns at Scale: Findings from a Crawl of 11K Shopping Websites](#),” Proceedings of the ACM on Human-Computer Interactions 3, CSCW, Article 81 (November, 2019).
- 32 Linda Di Geronimo et al., “UI Dark Patterns and Where to Find Them: A Study on Mobile Applications and User Perception,” CHI ‘20: Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems, April 2020.

- 
- 33 Christoph Bösch et al., “[Tales from the Dark Side: Privacy Dark Strategies and Privacy Dark Patterns](#),” Proceedings on Privacy Enhancing Technologies 4 (2016); Saul Greenberg et al., “[Dark patterns in proxemic interactions: a critical perspective](#),” DIS ‘14: Proceedings of the 2014 conference on Designing interactive systems, (June 2014).
- 34 Colin M. Gray et al., “The Dark (Patterns) Side of UX Design,” CHI ‘18: Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems, April 2018.
- 35 Mathur et al., “[Dark Patterns at Scale: Findings from a Crawl of 11K Shopping Websites](#).”
- 36 Colin Gray et al., “[The dark \(patterns\) side of UX design](#),” in Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI ‘18) Montreal, QC, April 21–26, 2018, New York: ACM Paper 534.
- 37 Karen Kornbluh and Ellen P. Goodman, [Safeguarding Digital Democracy](#), German Marshall Fund of the United States, March 24, 2020; Karen Kornbluh, Adrienne Goldstein, and Eli Weiner, “[New Study by Digital New Deal Finds Engagement with Deceptive Outlets Higher on Facebook Today Than Run-up to 2016 Election](#),” German Marshall Fund of the United States, October 12, 2020; Ellen P. Goodman and Karen Kornbluh, “[Social Media Platforms Need to Flatten the Curve of Dangerous Misinformation](#),” Slate, August 21, 2020.
- 38 Caroline Sindors, Designing Against Dark Patterns.

By contrast, the examples below show how U.S. federal agencies have employed design thinking to shape mandatory disclosures intended to empower consumers and advance substantive health and environmental goals. In so doing, they engaged in consumer research and evaluated evidence about the effectiveness of different message layouts,<sup>39</sup> the impact of graphic design and illustration,<sup>40</sup> and the utility in general of design principles.<sup>41</sup> Three of these examples are from the offline world, but one emerges from the online application of the originally offline Americans with Disabilities Act.

### *Fuel-Economy Labels*

The Environmental Protection Agency and the National Highway Traffic Safety Administration were required by the Energy Policy and Conservation Act of 1975 and the Energy Independence and Security Act of 2007 to require that fuel-economy labels be pasted to the windows of vehicles for sale. These labels had to have particular information, including fuel-economy measurements and emissions levels. When undertaking a redesign of the labels in 2011, the agencies took very seriously the physical layout of the label information “so as to maximize usefulness and minimize confusion for the consumer.”<sup>42</sup> They conducted consumer research to see how consumers might respond to different designs. Specifically, they convened consumer focus groups to probe such criteria as legibility, comprehensibility, and uniformity, and they also assembled an expert panel from

the advertising and product development industries.<sup>43</sup> This research and consultation informed the look and placement of the final labeling requirements, including the mandate that the label be displayed prominently in the upper-left part of the window.<sup>44</sup>

### *Consumer Energy Labels*

The Department of Energy redesigned mandatory consumer energy labels in 2019.<sup>45</sup> The final rule required that the labels use “one size, similar colors, and typefaces with consistent positioning of headline, copy, and charts to maintain uniformity” to aid consumers in making informed decisions.<sup>46</sup> Specific directions for height, width, font, and type size are included, along with label and type colors and label placement on the product to ensure its easy legibility.<sup>47</sup>

### *Nutrition Labels*

The Nutrition Labeling and Education Act of 1990 required the Food and Drug Administration (FDA) to establish criteria for nutrition labels that consumers could “readily observe and comprehend” and “understand its relative significance in the context of a total daily diet.” The FDA understood this instruction to require research into consumer perception and understanding as they relate to label design.<sup>48</sup> Major scientific groups urged the FDA to use consumer research studies to help set the formatting guidelines for labels, and it placed “considerable emphasis on the

39 See generally [Revisions and Additions to Motor Vehicle Fuel Economy Label](#) 76 Fed. Reg. 39,478 (July 6, 2011); [Tobacco Products: Required Warnings for Cigarette Packages and Advertisements](#) 85 Fed. Reg. 15,638 (March 18, 2020); [Food Labeling: Revision of the Nutrition and Supplement Facts Labels](#) 81 Fed. Reg. 33,742 (May 27, 2016), 33,936.

40 [Revisions and Additions to Motor Vehicle Fuel Economy Label](#) 76 Fed. Reg. 39,478 (July 6, 2011); [Tobacco Products: Required Warnings for Cigarette Packages and Advertisements](#) 85 Fed. Reg. 15,638 (March 18, 2020).

41 [Food Labeling: Revision of the Nutrition and Supplement Facts Labels](#) 81 Fed. Reg. 33,742 (May 27, 2016), 33,936.

42 [Revisions and Additions to Motor Vehicle Fuel Economy Label](#) 76 Fed. Reg. 39,478 (July 6, 2011), 39,482.

43 [Revisions and Additions to Motor Vehicle Fuel Economy Label](#) 76 Fed. Reg. 39,478 (July 6, 2011), 39,482.

44 [Revisions and Additions to Motor Vehicle Fuel Economy Label](#) 76 Fed. Reg. 39,478 (July 6, 2011), 39,506.

45 [Energy Labeling Rule](#) 84 Fed. Reg. 58,026 (October 30, 2019).

46 [Energy Labeling Rule](#) 84 Fed. Reg. 58,026 (October 30, 2019), 58,032.

47 [Energy Labeling Rule](#) 84 Fed. Reg. 58,026 (October 30, 2019), 58,032-58,033.

48 Food Labeling: Mandatory Status of Nutrition Labeling and Nutrient Content Revision, Format for Nutrition Label 58 Fed. Reg. 2079 (January 6, 1993), 2114-2115.

importance of consumer research in developing a new format for the nutrition label because of this advice.”<sup>49</sup>

In 2016, when updating the food nutrition labels, the FDA stated explicitly that its proposals were “based on graphic design principles,” referencing past research that offered evidence-based design recommendations—such as an emphasis on simple formats for comprehensibility—and enlisting the aid of graphic design experts.<sup>50</sup> After developing multiple label options the FDA commissioned two consumer studies, one using an experimental design methodology and one using eye-tracking methodology, that examined the proposed changes to the label format and consumers’ interpretations of information.<sup>51</sup> The outcome of their design-driven inquiry was a new format for “calories,” with increased type size and a numeric value highlighted in bold or extra bold type.<sup>52</sup>

### *Cigarette Warning Labels*

Pursuant to the Family Smoking Prevention and Tobacco Control Act of 2009 and years of engagement with health communications research, the FDA in 2020 adopted redesigned graphic warning labels for cigarette packages and tobacco advertisements. The text-only warnings that had adorned cartons for over 30 years had become functionally “invisible.”<sup>53</sup> They did “not effectively promote greater public understanding of the risks of smoking because they [did] not attract attention, [were] not remembered, and [did] not prompt thoughts about the risks of smoking.”<sup>54</sup> With the act Congress focused on design

by mandating that the FDA adopt color graphics to accompany text warnings in mandatory labels. The agency was authorized to alter the text, format, type size, and graphics of the health warnings if doing so would “promote greater public understanding of the risks associated with the use of tobacco products.”<sup>55</sup>

The FDA went about this task with a research-based design process that guided the location, prominence, look, and content of the warning labels. The label must occupy the top half of a cigarette pack’s front and back.<sup>56</sup> Citing consumer studies that support graphics, including a meta-analysis on combined text and image, the FDA also directly undertook two studies with over 12,000 participants to test the efficacy of proposed labels.<sup>57</sup>

### *ADA Application to Websites*

The U.S. federal government has already had some experience in applying design thinking to the digital space. Title III of the Americans with Disabilities Act (ADA) prohibits discrimination due to disability in places of public accommodation, such as restaurants, schools, and retail stores, as well as commercial facilities like offices and factories.<sup>58</sup> In 2010, the Department of Justice published updated Standards for Accessible Design.<sup>59</sup> These set out mandatory design considerations for the built environment, ranging from drinking fountains and dressing rooms to access ramps and ATM machines, with detailed diagrams and dimensions. While Title III does not specifically address the Internet, which was still in its infancy at the time of the act’s passage, its requirements have been interpreted to cover at least some portion of the

49 Food Labeling: Mandatory Status of Nutrition Labeling and Nutrient Content Revision, Format for Nutrition Label 58 Fed. Reg. 2079 (January 6, 1993), 2115.

50 [Food Labeling: Revision of the Nutrition and Supplement Facts Labels](#) 81 Fed. Reg. 33,742 (May 27, 2016), 33,936.

51 [Food Labeling: Revision of the Nutrition and Supplement Facts Labels](#) 81 Fed. Reg. 33,742 (May 27, 2016), 33,936.

52 [Food Labeling: Revision of the Nutrition and Supplement Facts Labels](#) 81 Fed. Reg. 33,742 (May 27, 2016), 33,939.

53 [Tobacco Products; Required Warnings for Cigarette Packages and Advertisements](#) 85 Fed. Reg. 15,638 (March 18, 2020).

54 [Tobacco Products; Required Warnings for Cigarette Packages and Advertisements](#) 85 Fed. Reg. 15,638 (March 18, 2020), 15,653.

55 Family Smoking Prevention and Tobacco Control Act, Section 201-202.

56 [Tobacco Products; Required Warnings for Cigarette Packages and Advertisements](#) 85 Fed. Reg. 15,638 (March 18, 2020), 15,640.

57 [Tobacco Products; Required Warnings for Cigarette Packages and Advertisements](#) 85 Fed. Reg. 15,638 (March 18, 2020), 15,656-15,658.

58 Americans With Disabilities Act of 1990, Pub. L. No. 101-336, 104 Stat. 328 (1990).

59 Department of Justice, “[2010 ADA Standards for Accessible Design](#),” September 15, 2010.

online world.<sup>60</sup> Title III protections generally apply when there is a connection between a website and access to a physical place of public accommodation, and in some jurisdictions even when there is not.

A loose consensus has developed around the features that certain digital spaces should have, as detailed in the Web Content Accessibility Guidelines (WCAG) which address mobile and tablet accessibility. Examples include a contrast ratio of text to background, alternatives to mouse hovers or clicks, consistent navigation signals, and giving users controls over audio and video. The Department of Justice proposed the WCAG 2.0 standards as the official technical standard for state and local government websites and web content in a 2016 supplemental advance notice of proposed rulemaking, but this was withdrawn by the Trump administration. In that same aborted rulemaking, the department made clear that social media platforms fall within Title III's scope, naming Facebook, Twitter, YouTube, and LinkedIn as examples.<sup>61</sup> The federal government itself is bound to use the WCAG 2.0 standard.<sup>62</sup>

## Empowering Design

The same design patterns used to manipulate users and keep them in the dark can be deployed instead to shed light.<sup>63</sup> If friction can impede users from exercising their will, it can also empower users by slowing the onslaught of disinformation and other noise. If legibility can be perverted to make text hard to see or read, it can also be used to make communications more conspicuous. If the time it takes to locate information

and act on it can be varied, platforms can shorten the path to civic information that empowers citizens instead of manipulating them. The design discipline's best practices around legibility<sup>64</sup> and contextual clues<sup>65</sup> can be deployed to reduce the noise of disinformation and increase the signal of civic information. The use of good design to reduce cognitive load, employ color and size strategically, and highlight healthy choices can and should be redirected to support a healthy information environment. Recent legislative proposals and enactments have begun to take on the use of digital dark patterns. Much less work has been done to encourage the use of empowering design.

## Recent Proposals and Enactments to Curb Dark Patterns

Policymakers have begun to adopt design thinking in their efforts to deter dark pattern techniques. Recent proposals in the United States and the EU address design head-on, requiring transparency, default settings, access, and ease of use.

Senators Mark Warner and Deb Fischer introduced in 2019 the Deceptive Experiences to Online Users Reduction Act (DETOUR Act) to prohibit the use of dark patterns designed to coerce the sharing of personal data. It defined dark patterns as design choices "obscuring, subverting, or impairing user autonomy, decision-making, or choice,"<sup>66</sup> exemplified by interfaces that hide alternative settings and default privacy features that encourage unknowing consent, while making it arduous and complicated to alter default settings.<sup>67</sup> The DETOUR Act would mandate the creation of a professional standards body able to promulgate best practices on user interface design, with the Federal Trade Commission serving as a regu-

60 See Blake E. Reid, "[Internet Architecture and Accessibility](#)," 95 *Indiana Law Journal* 591, 595-604 (2019) for a discussion on the different title III interpretation promulgated by federal circuits.

61 Nondiscrimination on the Basis of Disability; Accessibility of Web Information and Services of State and Local Government Entities 81 Fed. Reg. 28,658 (May 9, 2016), 28,672. The SANPRM was narrowly focused on providing technical standards for Title II institutions (public entities), and was the first of two planned technical standard regulations, the second of which would have addressed Title III entities.

62 General Services Administration, "[IT Accessibility Laws and Policies](#)," last accessed April 20, 2021.

63 Paul Ohm and Jonathan Frankle, "[Desirable Inefficiency](#)," *Florida Law Review*, 70:4 (2019).

64 Luz Rello, Martin Pielot, and Mari Carmen Marcos, "[Make It Big! The Effect of Font Size and Line Spacing on Online Readability](#)," CHI '16: Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems, (May 2016): 3637-3648.

65 Johnson, *Designing with the Mind in Mind*, 46-50.

66 [DETOUR Act](#), 4.

67 Office of Senator Deb Fischer, "[Senators Introduce Bipartisan Legislation to Ban Manipulative 'Dark Patterns'](#)," April 9, 2019.

latory backstop. This body would establish settings that enhance privacy protection by default, and would offer guidance to platforms on negative elements of design that could infringe on user autonomy, choice, and decision-making.<sup>68</sup>

***The same design patterns used to manipulate users and keep them in the dark can be deployed instead to shed light.***

California has legislated against dark patterns in its Consumer Privacy Rights Act, which stipulates that consumer agreements obtained through the use of dark patterns do not constitute consent. Like the DETOUR Act, this defines dark patterns as user interfaces that subvert or impair “user autonomy, decision-making, or choice,” and clarifies that user consent to broad or generalized “terms of use” does not constitute specific consent for the gathering and use of personal information.<sup>69</sup>

The EU has similarly sought to combat strategies meant to contravene user choice and agency. The basic notion of consent in the GDPR is that it must be a “freely given, specific, informed and unambiguous” indication of a user’s wishes. Services cannot be conditioned on users giving up their personal data.<sup>70</sup> As demonstrated in the companion piece to this paper, websites have used manipulative design to undermine the intent of the GDPR, making it difficult for users to access sites without agreeing to give access to their data.<sup>71</sup>

The EU’s proposed Digital Services Act stresses the importance of ensuring clarity and comprehensibility for users. For recommendation systems, such as those used in algorithmic ranking and suggestion features, the act would require very large online platforms to

present the central parameters used by recommendation systems “in an easily comprehensible manner to ensure that the recipients understand how information is prioritised for them,” while also providing users a series of alternative recommendation methods.<sup>72</sup> The act’s notice and action mechanisms similarly mandate ease of access and use,<sup>73</sup> while imposing transparency obligations for advertisers and online merchants that incorporate user accessibility and comprehensibility requirements.<sup>74</sup>

Separately, the EU’s Code of Practice on Disinformation, joined by the major platforms in 2018, has established reporting requirements that push them to detail new design decisions and features meant to highlight authoritative information and increase its consumption.<sup>75</sup> The EU’s review of the code in September 2020 found that, while it provided an important framework for cooperation among different stakeholders and illuminated platform initiatives, its voluntary nature meant that it lacked essential features such as clear performance indicators and an adequate (and enforceable) monitoring system.<sup>76</sup>

## **Approaches to Promote Empowering Patterns**

The examples above focus on the regulation of dark patterns to prevent privacy violations and deception. There has been less policy work on how design could help promote the signalling of high-quality information (meaning generally fact-based, useful for civic participation, and having the tendency to improve

68 [DETOUR Act](#), 7-13.

69 California Civil Code, [Section 1798.140](#).

70 General Data Protection Regulation, EU 2016/679.

71 Caroline Sindors, [Designing Against Dark Patterns](#),

72 European Commission, [Digital Services Act](#), 61-62.

73 [Digital Services Act](#), 51.

74 [Digital Services Act](#), 57-59.

75 European Commission, [First baseline reports – Fighting COVID-19 disinformation Monitoring Programme](#), September 10, 2020.

76 European Commission, [Assessment of the Code of Practice on Disinformation – Achievements and areas for further improvement](#), September 10, 2020.

democratic discourse).<sup>77</sup> One area of design, requiring additional research by the platforms, that could reduce the prevalence of bad information is the positive use of friction. Just as “frictive” design can disempower users (for example, the use of pop-ups to commandeer attention), it can also be used to empower them. Several digital platforms have experimented with interstitials—overlaid or pop-up messages—that discourage users from furthering false narratives, and intentional communication delays to reduce the prevalence of low-quality information.

Twitter has a policy of labeling tweets that contain misleading information about civic integrity, COVID-19, and synthetic and manipulated media. When users attempt to share tweets that have received a misleading information label, a prompt is supposed to be displayed pointing them to credible information before they are able to amplify the falsehoods.<sup>78</sup> Twitter says that it places the tweets of public officials that violate its policies behind a screen that offers context about the rule violation and compels people to click through the notice in order to see the tweet. Tweets that have received a notice screen cannot get likes or retweets but only quote tweets; this ensures the tweet is not algorithmically recommended by Twitter.<sup>79</sup> At one point, Twitter interrupted users trying to retweet articles they had not read by asking them if they would like to read the article before sharing.<sup>80</sup> The initial rollout on Android devices provided encouraging figures: people who saw the prompt opened articles 40 percent more often, and the overall proportion of people opening articles before retweeting increased

by 33 percent.<sup>81</sup> Twitter eventually suspended the rule because it was not convinced that slowing down transmission of disinformation increased information quality.<sup>82</sup> However, recent research in applied psychology suggests that encouraging deliberation increases individuals’ capacity to discern whether a headline is true or false.<sup>83</sup>

***Just as “frictive” design can disempower users, it can also be used to empower them.***

More serious frictive solutions had better effects. Analysis by the Washington Post of over 30,000 tweets by political figures in the first two weeks of November 2020 (just before and after the U.S. presidential election) revealed that a “hard intervention”—a screen over the disinforming tweet and the prevention of likes, replies, or retweets—greatly reduced spread.<sup>84</sup> However, tweets that received only a “soft intervention”—a warning label—continued to spread.

Last year we proposed another type of friction to improve the information environment: virality disrupters to slow the contagion of disinformation and hate, including a circuit breaker that would stop traffic on a post once it reached a certain level of virality and pending human review for online harms.<sup>85</sup> The analogy is to stock market circuit breakers that are triggered when stock prices drop precipitously in order to allow investors to take a breath and deliberate. This idea has been implemented to a degree by Face-

77 There is no consensus definition of high-quality information. One of the best reviews of conceptions of high-quality journalism as a product and process is Stephen Lacy and Tom Rosenstiel, “[Defining and Measuring Quality Journalism](#),” Rutgers School of Communication and Information, March 2015. The [Trust Project](#) has developed eight indicators for the international classification of trusted news sources. At the core of most definitions is a commitment to accuracy, transparency, and fairness.

78 Vijaya Gadde and Kayvon Beykpour, “[Additional steps we’re taking ahead of the 2020 US Election](#),” Twitter, October 9, 2020.

79 Twitter, “[About public-interest exceptions on Twitter](#),” last accessed April 21, 2021.

80 Twitter Support, “[Tweet](#),” June 10, 2020.

81 James Vincent, “[Twitter is bringing its ‘read before you retweet’ prompt to all users](#),” The Verge, September 25, 2020.

82 Vijaya Gadde and Kayvon Beykpour, “[An update on our work around the 2020 US Elections](#),” Twitter, November 12, 2020.

83 Bence Bago, David G. Rand, and Gordon Pennycook, “[Fake news, fast and slow: Deliberation reduces belief in false \(but not true\) news headlines](#),” *Journal of Experimental Psychology: General*, 149:8 (2020): 1608–1613.

84 Megan A. Brown et al., “[Twitter put warning labels on hundreds of thousands of tweets. Our research examined which worked best](#),” Washington Post, December 9, 2020.

85 Ellen Goodman, “[Digital Information Fidelity and Friction](#),” Knight First Amendment Institute, February 26, 2020.

book, which revealed that for some types of policy-violating content distribution is dampened for a week while factcheckers deliberate over its veracity.<sup>86</sup> This idea has now been picked up and recommended by the transnational Forum on Information and Democracy, the Working Group on Infodemics Policy Framework (2020), and the Center for American Progress.<sup>87</sup>

***There is a need to create design codes for digital space that promote civic information and user autonomy.***

Elsewhere we have described what the virality curve might look like at the point at which the circuit breaker kicked in, noting that a trigger of 100,000 Facebook interactions in 12 hours might be an appropriate inflection point, at which time the platforms could take action and perform a policy review.<sup>88</sup> Because only the platforms have the proprietary data to determine the speed and spread of a post, the circuit breaker idea depends on their cooperation and data disclosures.

## Conclusion

Builders in physical space have building codes to safeguard the public interest, some of which are voluntary best practices. There is a need to create design codes for digital space that promote civic information and user autonomy. These could provide for consistent and effective presentation across platforms of advertising source disclosures, certifications for trustworthy information sources, the prominent placement and algorithmic boosting of civic information (as the platforms have done with information from the Centers for Disease Control and Prevention during the coronavirus pandemic), and signifiers of media manipulation to help users identify alterations. These mechanisms of empowering design, drawing on techniques of prominence, legibility, and speed, would help to promote fact-based information that is important for democratic participation, as well as to empower users.

---

86 Ben Smith, "[Is an Activist's Pricey House News? Facebook Alone Decides](#)," New York Times, April 25, 2021. Casey Newton reported on Facebook's roll-out of something akin to a virality circuit breaker in August 2020, which the company termed a "viral content review system." Casey Newton, "[New Ideas for Fighting COVID-19 Misinformation](#)," The Verge, August 20, 2020.

87 Forum on Information and Democracy, [Working Group on Infodemics](#), November 2020; Erin Simpson and Adam Connor, [Fighting Coronavirus Misinformation and Disinformation](#), Center for American Progress, August, 2020.

88 Goodman and Kornbluh, "[Social Media Platforms Need to Flatten the Curve of Dangerous Misinformation](#)."

This work represents solely the opinion of the author and any opinion expressed herein should not be taken to represent an official position of the institution to which the author is affiliated.

**About the Author(s)**

Ellen P. Goodman is a professor at Rutgers Law School, the co-director and co-founder of the Rutgers Institute for Information Policy & Law, and a senior fellow with GMF Digital.

Karen Kornbluh is a senior fellow and director of GMF Digital. She previously served as the U.S. Ambassador to the Organization for Economic Cooperation and Development and as a senior official at the Federal Communications Commission and the U.S. Department of Treasury.

Eli Weiner is a research assistant with the Digital Innovation and Democracy Initiative at the German Marshall Fund of the United States.

**About GMF Digital**

The German Marshall Fund's Digital Innovation and Democracy Initiative (GMF Digital) works to support democracy in the digital age. GMF Digital leverages a transatlantic network of senior fellows to develop and advance strategic reforms that foster innovation, create opportunity, and advance an equitable society.

**About GMF**

The German Marshall Fund of the United States (GMF) is a non-partisan policy organization committed to the idea that the United States and Europe are stronger together. GMF champions the principles of democracy, human rights, and international cooperation, which have served as the bedrock of peace and prosperity since the end of World War II, but are under increasing strain. GMF works on issues critical to transatlantic interests in the 21st century, including the future of democracy, security and defense, geopolitics and the rise of China, and technology and innovation. By drawing on and fostering a community of people with diverse life experiences and political perspectives, GMF pursues its mission by driving the policy debate through cutting-edge analysis and convening, fortifying civil society, and cultivating the next generation of leaders on both sides of the Atlantic. Founded in 1972 through a gift from Germany as a tribute to the Marshall Plan, GMF is headquartered in Washington, DC, with offices in Berlin, Brussels, Ankara, Belgrade, Bucharest, Paris, and Warsaw.



Ankara • Belgrade • Berlin • Brussels • Bucharest  
Paris • Warsaw • Washington, DC