



Written Testimony of Josh Golin

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**In Support of S. 69: An Act Relating to an Age-Appropriate Design Code
Before the House Committee on Commerce and Economic Development**

April 8, 2025

My name is Josh Golin and I am Executive Director of Fairplay and a resident of Newfane, Vermont and a parent of a sixteen-year-old girl.

I would like to thank Chair Michael Marcotte and the Committee for holding this hearing of critical importance to America's families, and for inviting me to testify.

For more than a decade, social media companies have been performing a vast uncontrolled experiment on our children. I work every day with families who have paid the ultimate price as a result of that experiment. These parents have lost their children to online harms, including cyberbullying, pro-eating disorder and suicide content, sextortion, and dangerous challenges, and they have traveled to Capitol Hill time and again to send lawmakers a clear message: Big Tech cannot be trusted to protect kids and teens online, and it is time to regulate these powerful companies. That is the same message I bring to you today to urge the advancement of the Vermont Age-Appropriate Design Code.

Recent lawsuits – including suits against Instagram and TikTok by Vermont Attorney General Charity Clark – reveal what families have long known: Big Tech's products are designed for profit, not the protection of kids and teens. Tech companies use the reams of data they collect on young people and endless A/B testing to fine tune their platforms' algorithms and design to maximize engagement, because more time and activity on a platform means more revenue. And because the way these platforms engage with young people is largely unregulated, there is no obligation to consider and mitigate the harmful effects of their design choices on children and teens.

The resulting impact on children and families has been devastating. Compulsive overuse, exposure to harmful and age-inappropriate content, cyberbullying, eating disorders, harms to mental health, and the sexual exploitation of children are just some of the problems linked to Big Tech's insidious business model.

It doesn't have to be this way. Instead of prioritizing engagement and data collection, apps, websites, and online platforms could be built in ways that reduce risks and increase safeguards for children and teens. With many young people now spending a majority of their waking hours

online and on social media, improving the digital environment so it is safer and not exploitative or addictive is one of the most important things we can do to address the mental health crisis.

But that won't happen through self-regulation. Without meaningful action from legislators, children and teens will continue to be harmed in the most serious and tragic ways by Instagram, TikTok, Snapchat, YouTube, and thousands of lesser known apps, websites, and platforms.

Mitigating the serious harms that social media and excessive time online have caused to young people's mental health and wellbeing requires a comprehensive approach. We need regulations that limit data collection and prohibit design techniques that compel compulsive usage of social media. We need transparency so that parents and young people understand the risks of using online platforms and companies are incentivized by their reporting to do better by children and teens. And we need to change young people's environments so they get a break from constant posting and checking of platforms and the pressures of performing and social comparison. With the passage of the Age Appropriate Design Code and S. 21, a bill to prohibit phone use in schools, Vermont could do all of these things and become the unquestioned leader in the growing movement to stop smartphone addiction and protect children online.

I. About Fairplay

Fairplay is the leading independent watchdog of the children's media and marketing industries. We are committed to building a world where kids can be kids, free from the false promises of marketers and the manipulations of Big Tech. Our advocacy is grounded in the overwhelming evidence that child-targeted marketing – and the excessive screen time it encourages – undermines kids' healthy development.

Through corporate campaigns and strategic regulatory filings, Fairplay and our partners have changed the child-targeted marketing and data collection practices of some of the world's biggest companies. Our 2023 complaint against anonymous messaging app NGL ("Not Gonna Lie") resulted in an enforcement action led by the Federal Trade Commission and Los Angeles District Attorney banning the app from offering its services to minors and ordering \$5 million in civil penalties and refunds to consumers.¹ In 2021, we led a large international coalition of parents, advocates, and child development experts to stop Meta from releasing a version of Instagram for younger children.² Our 2018 Federal Trade Commission complaint against Google for violating the Children's Online Privacy Protection Act (COPPA) led to the 2019 FTC settlement that required Google to pay a record fine and to limit data collection and targeted advertising

¹ Federal Trade Commission, *FTC Order Will Ban NGL Labs and its Founders from Offering Anonymous Messaging Apps to Kids Under 18 and Halt Deceptive Claims Around AI Content Moderation* (July 9, 2024), <https://www.ftc.gov/news-events/news/press-releases/2024/07/ftc-order-will-ban-ngl-labs-its-founders-offering-anonymous-messaging-apps-kids-under-18-halt>; Fairplay & Kristin Bride, *Request for Investigation of NGL Labs for violations of Section 5 of the FTC Act* before the Federal Trade Commission (filed Oct. 19, 2023), https://fairplayforkids.org/wp-content/uploads/2023/10/NGL_complaint.pdf.

² Brett Molina and Terry Collins, *Facebook postponing Instagram for kids amid uproar from parents, lawmakers*, USA Today (Sept. 27, 2021), <https://www.usatoday.com/story/tech/2021/09/27/instagram-kids-version-app-children-pause/5881425001/>.

on child-directed content on YouTube.³ In 2023, we urged the FTC to investigate evidence that Google and YouTube may be in violation of the terms of that settlement.⁴ In November 2022, we filed a Petition for Rulemaking with our partners at the Center for Digital Democracy and 20 other organizations urging the FTC to declare that certain design techniques used by platforms to maximize user engagement are unfair practices.

Fairplay also leads the Designed with Kids in Mind Coalition, which advocates for regulations that would require operators to make the best interests of children a primary consideration when designing apps, websites, and platforms likely to be accessed by young people.⁵ Fairplay and many of our coalition members actively supported the successful passage of the California Age Appropriate Design Code and Maryland Kids Code. We have been lead organizers on the federal legislative campaigns for the Kids Online Safety Act and the Children and Teens' Online Privacy Protection Act. Last year, both federal bills passed the Senate in a historic 91-3 vote but intense industry lobbying kept the bills from passing the House.

We are also home to the Screen Time Action Network, a collaborative community of practitioners, educators, advocates, and parents who work to reduce excessive technology use harming children, adolescents, and families. Last year, along with David's Legacy Foundation, we launched ParentsSOS (Parents for Safe Online Spaces) an initiative of twenty families whose children have died as a result of online harms and advocate for online safety legislation.⁶

II. Children and teens spend a significant portion of their day using digital media.

Digital device use begins in early childhood: Nearly half of 2- to 4-year-olds and more than two-thirds of 5- to 8-year-olds have their own tablet or smartphone.⁷ Preschool-age children average 2.5 hours of screen media use per day, and five- to eight-year-olds average about 3 hours.⁸ In a study of elementary school-aged children's digital media use during the pandemic, approximately one-third of parents reported that their children began using social media at a younger age than they had originally planned.⁹

³ Campaign for a Commercial-Free Childhood (now Fairplay) and Center for Digital Democracy, *Request to Investigate Google's YouTube Online Service and Advertising Practices for Violating the Children's Online Privacy Protection Act*, Counsel for Center for Digital Democracy and Campaign for a Commercial-Free Childhood before the Federal Trade Commission (filed April 2, 2018), <https://fairplayforkids.org/advocates-say-googles-youtube-violates-federal-childrens-privacy-law/>.

⁴ Fairplay, Center for Digital Democracy, Common Sense Media & Electronic Privacy Information Center, *Letter to FTC re: Adalytics Reports* (August 23, 2023), <https://fairplayforkids.org/wp-content/uploads/2023/08/FTCRequestForInvestigationAug23.pdf>.

⁵ Coalition members include Accountable Tech, American Academy of Pediatrics, Center for Digital Democracy, Center for Humane Technology, Children and Screens, Common Sense, Electronic Privacy Information Center, Exposure Labs: The Creators of The Social Dilemma, Fairplay, ParentsTogether, and RAINN: <https://designedwithkidsinmind.us/>.

⁶ ParentsSOS, *Our Kids*, <https://www.parentssos.org/stories>.

⁷ Victoria Rideout & Michael B. Robb, *The Common Sense Census: Media Use by Kids Age Zero to Eight*, 2020, Common Sense Media at 25, (2020), https://www.commonsensemedia.org/sites/default/files/research/report/2020_zero_to_eight_census_final_web.pdf.

⁸ *Id.*

⁹ Tiffany Munzer, Chioma Torres, et al., *Child Media Use During COVID-19: Associations with Contextual and Social-Emotional Factors*, 43 *Journal of Developmental and Behavioral Pediatrics* at 3 (2022), <https://pubmed.ncbi.nlm.nih.gov/36106745/>.

Despite the fact that all major social media sites have a minimum age of 13 in their terms of service, a growing number of younger children use platforms like TikTok, Snapchat and Instagram. About half of parents of children ages 10 to 12 and 32% of parents of kids ages 7 to 9 reported their child used social media apps in the first six months of 2021.¹⁰ That same year, 18% of 8- to 12-year-olds reported using social media every day, a 38% increase from just two years prior.¹¹ Leaked documents from TikTok revealed the company used machine learning to analyze user accounts and classified one-third of the platform's users as under 14,¹² which suggests platform operators are well aware that children lie about their age in order to access social media.

Research indicates the COVID-19 pandemic has increased screen media use for preteens and teenagers. In 2021, preteens (ages 8 to 12) averaged over 5.5 hours of entertainment screen time per day and teens (ages 13 to 18) averaged a remarkable 8.5 hours daily - a 17% increase from 2019 for both age groups.¹³ Much of this time is spent on the major social media platforms. Over 90% of teens say they use YouTube, and approximately 60% say they use TikTok, Snapchat, and Instagram.¹⁴ One-third of teens say they are using one of the top five online platforms – YouTube, TikTok, Instagram, Snapchat, or Facebook – “almost constantly, and 50% of teens say they are online in general “almost constantly.”¹⁵

Teens' and preteens' daily screentimes vary based on race and household income. White preteens average 4.5 hours of entertainment screen time use daily, compared to Black preteens (6.5 hours) and Hispanic/Latino preteens (7 hours). White teens spend approximately 8 hours per day on screens for entertainment, while Black and Hispanic/Latino teens average approximately two hours more.¹⁶ Preteens in higher-income households spend just under 4.5 hours of screen time per day, compared to preteens in middle-income households (5.75 hours) and lower-income households (7.5 hours). Teens in higher-income households spend about 2.5

¹⁰ Kristen Rogers, *Children under 10 are using social media. Parents can help them stay safe online*, CNN, (Oct. 18, 2021), <https://www.cnn.com/2021/10/18/health/children-social-media-apps-use-poll-wellness/index.html>

¹¹ Victoria Rideout, Alanna Peebles, et al., *The Common Sense Census: Media Use by Tweens and Teens at 12*, (2022), https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf.

¹² Raymond Zhong and Sheera Frenkel, *A Third of TikTok's U.S. Users May Be 14 or Under, Raising Safety Questions*, New York Times, (Aug. 14, 2020), <https://www.nytimes.com/2020/08/14/technology/tiktok-underage-users-ftc.html>.

¹³ Common Sense, *The Common Sense Census: Media Use by Tweens and Teens at 12* (2022), https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf.

¹⁴ Michelle Faverio & Olivia Sidoti, *Teens, Social Media and Technology 2024*, Pew Research Center (Dec. 12, 2024), <https://www.pewresearch.org/internet/2024/12/12/teens-social-media-and-technology-2024/>.

¹⁵ *Id.*

¹⁶ Victoria Rideout, Alanna Peebles, et al., *The Common Sense Census: Media Use by Tweens and Teens at 12*, (2022), https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf.

hours less daily on screens for entertainment compared to teens in lower- and middle-income households, (7 and 9.5 hours daily, respectively).¹⁷

Further, screentime has a significant impact on education and learning. A 2024 study of U.S. teens' phone use during the school day found that teens spent 1.5 hours on their smartphones during the school day on average, and 25% of the teens in the study spent more than 2 hours per school day.¹⁸

III. Overuse of digital media is linked to a number of serious harms for young people

Increased time online and social media use is linked to serious harms for young people. As the Surgeon General has observed – and as described in detail in Section IV of this testimony – “[b]usiness models are often built around maximizing user engagement as opposed to safeguarding users’ health and ensuring that users engage with one another in safe and healthy ways . . . This translates to technology companies focusing on maximizing time spent, not time well spent.”¹⁹ By maximizing time and activities online, the design choices made by platforms to maximize engagement harm minors in a number of ways, including: undermining mental health, harm to body image, fostering problematic internet use, harming physical health, increasing minors’ risk of contact with dangerous or harmful people, and increasing minors’ exposure to age-inappropriate and otherwise harmful content.

Harm to mental health

Maximizing minors’ time and activities online is linked with worse psychological wellbeing in minors in concrete and serious ways that cannot be ignored in the context of the current youth mental health crisis.

Heavy users of digital media are more likely to be unhappy, to be depressed, or to have attempted suicide.²⁰ Two nationally representative surveys of U.S. adolescents in grades 8 through 12 found “a clear pattern linking screen activities with higher levels of depressive symptoms/suicide-related outcomes and nonscreen activities with lower levels.”²¹ The same research found that suicide-related outcomes became elevated after two hours or more a day of electronic device use.²² Among teens who used electronic devices five or more hours a day, a

¹⁷ *Id.*

¹⁸ Dimitri A. Christakis, Gina Marie Mathew & David A. Reichenberger, et al., *Research Letter: Adolescent Smartphone Use During School Hours*, JAMA Pediatrics (Feb. 3, 2025), <https://jamanetwork.com/journals/jamapediatrics/fullarticle/2829879>.

¹⁹ *Protecting Youth Mental Health: The U.S. Surgeon General’s Advisory* at 25 (2021), <https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf>.

²⁰ Jean M. Twenge & W. Keith Campbell, *Media Use Is Linked to Lower Psychological Well-Being: Evidence from Three Datasets*, 90 Psychol. Q., 311 (2019). <https://pubmed.ncbi.nlm.nih.gov/30859387/>

²¹ Jean M. Twenge et al., *Increases in Depressive Symptoms, Suicide-Related Outcomes, and Suicide Rates Among U.S. Adolescents After 2010 and Links to Increased New Media Screen Time*, 6 Clinical Psychol. Sci. 3, 9 (2018) <https://doi.org/10.1177/2167702617723376>. See also Jane Harness et al., *Youth Insight About Social Media Effects on Well/ill-Being and Self-Modulating Efforts*, 71 J. Adolescent Health, 324-333 (Sept. 1, 2022), 10.1016/j.jadohealth.2022.04.011; Amy Orben et al., *Windows of Developmental Sensitivity to Social Media*, 13 Nature Comm., 1649, (2022), 10.1038/s41467-022-29296-3

²² *Id.*

staggering 48% exhibited at least one suicide risk factor.²³ Of particular concern, a large and growing body of research indicates a strong link between time spent on social media—some of the services most relentless in their deployment of engagement-maximizing techniques—and serious mental health challenges.²⁴ More frequent and longer social media use is associated with depression,²⁵ anxiety,²⁶ and suicide risk factors.²⁷

Even if some of these documented associations are explained by children’s underlying emotional challenges, the design features that online platforms deploy to maximize engagement are likely to have differential negative effects on these young people. For example, children with more negative emotionality may seek endless scrolling as a means of dissociating from emotional distress,²⁸ yet may be recommended more negative content based on their previous behavior.²⁹ Former Meta employee Frances Haugen has described how the company (then called Facebook) documented this harmful cycle in its own internal research on Instagram: “And what’s super tragic is Facebook’s own research says, as these young women begin to consume this -- this eating disorder content, they get more and more depressed. And it actually makes them use the app more. And so, they end up in this feedback cycle where they hate their bodies more and more.”³⁰

Harm to body image

Design features that maximize time spent on social media can also lead to heightened exposure to content which increases minors’ susceptibility to poor body image and, consequently, disordered eating. A 2019 study of 7th and 8th graders in the *International Journal of Eating Disorders* “suggest[ed] that [social media], particularly platforms with a strong focus on image posting and viewing, is associated with elevated [disordered eating] cognitions and behaviors in

²³ *Id.*

²⁴ See, e.g., K.E. Riehm et al., *Associations Between Time Spent Using Social Media and Internalizing and Externalizing Problems Among US Youth*, 76 *JAMA Psychiatry*, 1266 (2019), <https://doi.org/10.1001/jamapsychiatry.2019.2325>; N. McCrae et al., *Social Media and Depressive Symptoms in Childhood and Adolescence: A Systematic Review*, 2 *Adolescent Res. Rev.*, 315 (2017), <https://doi.org/10.1007/s40894-017-0053-4>; H. Allcott et al., *The Welfare Effects of Social Media*, 110 *Econ. Rev. Am.* 629 (2020), <https://www.aeaweb.org/articles?id=10.1257/aer.20190658>

²⁵ Jean M. Twenge & W. Keith Campbell, *Media Use Is Linked to Lower Psychological Well-Being: Evidence from Three Datasets*, 90 *Psychol. Q.* at 312 (2019). <https://pubmed.ncbi.nlm.nih.gov/30859387/>

²⁶ Royal Society for Public Health, *#StatusOfMind: Social Media and Young People’s Mental Health and Wellbeing* 8 (May 2017), <https://www.rsph.org.uk/static/uploaded/d125b27c-0b62-41c5-a2c0155a8887cd01.pdf>

²⁷ Jean M. Twenge & W. Keith Campbell, *Media Use Is Linked to Lower Psychological Well-Being: Evidence from Three Datasets*, 90 *Psychol. Q.* (2019). <https://pubmed.ncbi.nlm.nih.gov/30859387/>

²⁸ Amanda Baughan et al., “*I Don’t Even Remember What I Read*”: How Design Influences Dissociation on Social Media, CHI Conference on Human Factors in Computing Systems, 1-13 (2022), <https://dl.acm.org/doi/pdf/10.1145/3491102.3501899>.

²⁹ Kait Sanchez, *Go Watch this WSJ investigation of TikTok’s Algorithm*, *The Verge*, (July 21, 2021), <https://www.theverge.com/2021/7/21/22587113/tiktok-algorithm-wsj-investigation-rabbit-hole>.

³⁰ Scott Pelley, *Whistleblower: Facebook is misleading the public on progress against hate speech, violence, misinformation*, CBS, (Oct. 3, 2021), <https://www.cbsnews.com/news/facebook-whistleblower-frances-haugen-misinformation-public-60-minutes-2021-10-03/>.

young adolescents.”³¹ Another study found a positive correlation between higher Instagram use and orthorexia nervosa diagnoses.³² Personal stories from sufferers of disordered eating have highlighted the link to social media.³³ This problem is not exclusive to adolescent girls: teenage boys have described “looksmaxxing” communities on TikTok that create pressure to engage in extreme dieting (“starvemaxxing”) to achieve unrealistic beauty standards.³⁴

Companies’ internal research clearly demonstrates the problem. The documents Frances Haugen shared with the *Wall Street Journal* in 2021 revealed that Facebook has been aware at least since 2019 that “[w]e make body image issues worse for one in three teen girls.”³⁵ Further, attorney generals’ investigations into Instagram have revealed that Meta continues to offer features that are known to harm users’ body image. For example, Meta has known for years that its visual camera “filters” and “effects” are harmful to young users. One such set of filters can simulate the effects of cosmetic surgery, botox, and skin enhancements.³⁶ Extensive academic research has shown that these plastic surgery filters have significant negative mental health impacts, especially for young, female users.³⁷ As a result, several high ranking employees advocated for banning the filters from Meta’s platforms.³⁸ Those employees created a reference document for Mark Zuckerberg detailing Meta’s consultation with “21 independent experts from around the world,” who agreed that cosmetic surgery filters can have severe mental health impacts “on both the individuals using the effects and those viewing the images,” and that “children are particularly vulnerable.”³⁹ Despite the uniform conclusion of researchers, and wide support within the company itself, Mark Zuckerberg personally chose to veto a policy that would have banned plastic surgery filters on Meta’s platforms, stating that there is a “clear demand” for the filters and that he had seen “no data” suggesting they were harmful.⁴⁰

³¹ Simon M. Wilksch et al., *The Relationship Between Social Media Use and Disordered Eating in Young Adolescents*, 53 *Int. J. Eat. Disord.* 96, 104 (2020).

³² Pixie G. Turner & Carmen E. Lefevre, *Instagram Use Is Linked to Increased Symptoms of Orthorexia Nervosa*, 22 *Eating Weight Disorders* 277, 281 (2017).

³³ See, e.g., Jennifer Neda John, *Instagram Triggered My Eating Disorder*, *Slate* (Oct. 14, 2021), <https://slate.com/technology/2021/10/instagram-social-media-eating-disorder-trigger.html>; Clea Skopeliti, *‘I Felt My Body Wasn’t Good Enough’: Teenage Troubles with Instagram*, *The Guardian* (Sep. 18, 2021), <https://www.theguardian.com/society/2021/sep/18/i-felt-my-body-wasnt-good-enough-teenage-troubles-with-instagram>.

³⁴ Rachel Hosie & Lindsay Dodgson, *Why young men are 'starvemaxxing' to look like their chiseled, masculine idols*, *Business Insider* (Feb. 17, 2024), <https://www.businessinsider.com/looksmaxxing-starvemaxxing-tiktok-trend-guy-face-2024-2?>

³⁵ Georgia Wells et al., *Facebook Knows Instagram Is Toxic for Teen Girls, Company Documents Show*, *W.S.J.* (Sept. 14, 2021), <https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739>.

³⁶ *Commonwealth of Massachusetts v. Meta Platforms Inc. and Instagram, LLC*, No. 2384CV02397-bls1, Count 225 (Mass. Super. Ct. Nov. 6, 2023).

³⁷ *Id.* at Count 227.

³⁸ *Id.* at Count 230-231.

³⁹ *Id.* at Count 233.

⁴⁰ *Id.* at Count 235.

Similarly, attorney generals have discovered that TikTok has found its appearance-altering filters are likely to harm young users. According to information that was unredacted recently in Massachusetts’ complaint against TikTok, the company acknowledged that there are unique developmental considerations for minors when it comes to beauty filters:

“Filters on Tik[T]ok and other Bytedance products have a high risk of harming U18 [under 18] users.” [TikTok] further concluded that “adolescents are particularly susceptible to harm” when it comes to the usage and consumption of beauty filters “as they are developing their self-image, are at a critical period for developing body dysmorphia and eating disorders, and are more easily pressured by the opinions of others.”⁴¹

The Massachusetts Attorney General said that TikTok tested removing a beauty filter from TikTok Live, but “viewers’ engagement dropped and TikTok Creators (the platform’s users who post videos or livestream) livestreamed less,” so the company has continued to offer the filters to minors.⁴²

Risk of problematic internet use and its associated harms

Maximizing time and activities online also fosters “problematic internet use”—psychologists’ term for excessive internet activity that exhibits addiction, impulsivity, or compulsion.⁴³ In a 2024 Pew Research survey, one-third of teens said they are on YouTube, TikTok, Instagram, Snapchat, or Facebook “almost constantly.”⁴⁴ An Amnesty International report on young people ages 13-24 found “a staggering 74% of respondents report checking their social media accounts more than they would like to. Respondents bemoaned the ‘addictive’ lure of the constant stream of updates and personalized recommendations, often feeling ‘overstimulated’ and ‘distracted.’”⁴⁵

Problematic internet use, in turn, is linked to a host of additional problems. For example, one study of 564 children between the ages of 7 and 15 found that problematic internet use was positively associated with depressive disorders, Attention Deficit Hyperactivity Disorder, general

⁴¹ Commonwealth of Massachusetts v. TikTok Inc., et al., No. 2484CV2638-BLS-1, Count 288 (Mass. Super. Ct. Feb. 3, 2025).

⁴² *Id.* at Count 289.

⁴³ Chloe Wilkinson et al., *Screen Time: The Effects on Children’s Emotional, Social, and Cognitive Development*, Informed Futures, at 6, (2021), <https://informedfutures.org/wp-content/uploads/Screen-time-The-effects-on-childrens-emotional-social-cognitive-development.pdf>.

⁴⁴ Emily A. Vogels et al., *Teens, Social Media and Technology 2022*, Pew Research Center (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022>.

⁴⁵ Amnesty International, “*We are totally exposed*”: Young people share concerns about social media’s impact on privacy and mental health in global survey (Feb. 7, 2023) <https://www.amnesty.org/en/latest/news/2023/02/children-young-people-social-media-survey-2/>.

impairment, and increased sleep disturbances.⁴⁶ A meta-analysis of peer-reviewed studies involving cognitive findings associated with problematic internet use in both adults and adolescents found “firm evidence that [problematic internet use]. . . is associated with cognitive impairments in motor inhibitory control, working memory, Stroop attentional inhibition and decision-making.”⁴⁷ Another study of over 11,000 European adolescents found that among teens exhibiting problematic internet use, 33.5% reported moderate to severe depression; 22.2% reported self-injurious behaviors such as cutting; and 42.3% reported suicidal ideation.⁴⁸ The rate of attempted suicides was a staggering ten times higher for teens exhibiting problematic internet use than their peers who exhibited healthy internet use.⁴⁹

Massachusetts’ complaint against TikTok alleges that the company has documented overuse of its platform having these exact consequences for users. The complaint says TikTok found that social media use can become habitual or excessive, and there is “a strong association, and likely a causal one, between heavy phone and internet use and losses of analytical and problem-solving skill [sic], memory formation, contextual thinking, conversational depth and empathy as well as increases in anxiety.” Further, “excessive social media engagement” “means that we are spending less time building and maintaining relationships with actual people.”⁵⁰ The company found that using its platform for six hours or more per day is associated with “a higher risk for depression,” and users on the platform for seven or more hours per day “experience[] thinning of the brain’s cortex, which is related to critical thinking and reasoning.”⁵¹

Harm to physical health

Maximizing minors’ time spent online at the expense of sleep or movement also harms their physical health. When minors are driven to spend more time online, they sleep less for a variety of reasons – because it is impossible to be online and sleep at the same time, because stimulation before bedtime disrupts sleep patterns, and because many of the design features used by online platforms make users feel pressured to be connected constantly, and that feeling often doesn’t go away at bedtime. Research shows that minors who exhibit problematic internet use often suffer from sleep problems.⁵² One-third of teens report waking up and

⁴⁶ Restrepo et al., *Problematic Internet Use in Children and Adolescents: Associations with Psychiatric Disorders and Impairment*, 20 BMC Psychiatry 252 (2020), <https://doi.org/10.1186/s12888-020-02640-x>.

⁴⁷ Konstantinos Ioannidis et al., *Cognitive Deficits in Problematic Internet Use: Meta-Analysis of 40 Studies*, 215 British Journal of Psychiatry 639, 645 (2019), <https://pubmed.ncbi.nlm.nih.gov/30784392/>.

⁴⁸ Michael Kaess et al., *Pathological Internet use among European adolescents: psychopathology and self-destructive behaviours*, 23 Eur. Child & Adolescent Psychiatry 1093, 1096 (2014), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4229646/>.

⁴⁹ *Id.*

⁵⁰ Commonwealth of Massachusetts v. TikTok Inc., et al., No. 2484CV2638-BLS-1, Count 180 (Mass. Super. Ct. Feb. 3, 2025).

⁵¹ *Id.* at Count 318.

⁵² Anita Restrepo, Tohar Scheininger, et al., *Problematic Internet Use in Children and Adolescents: Associations with Psychiatric Disorders and Impairment*, 20 BMC Psychiatry 252 (2020), <https://doi.org/10.1186/s12888-020-02640-x>.

checking their phones for something other than the time at least once per night.⁵³ Some teens set alarms in the middle of the night to remind them to check their notifications or complete video game tasks that are only available for a limited time.⁵⁴

Big Tech is aware its platforms disrupt young users' sleep. According to the Massachusetts Attorney General, TikTok's internal research found "[t]he use of TikTok at night delays sleep for some users, disturbing their sleep patterns and preventing them from getting the minimum recommended amount of sleep" and "[M]any [users] described their use of TikTok disturbing their sleep, which limited their productivity and performance the following day."⁵⁵

These behaviors in turn create new risks for young people. Screen time before bed is associated with lower academic performance.⁵⁶ Teenagers who use social media for more than five hours per day are about 70% more likely to stay up late on school nights.⁵⁷ A lack of sleep in teenagers has been linked to inability to concentrate, poor grades, drowsy-driving incidents, anxiety, depression, thoughts of suicide, and even suicide attempts.⁵⁸ Indeed, Massachusetts reports that [i]nternal TikTok documents note research findings that teens with more than two hours a day of screentime 'scored lower on thinking and language tests.'⁵⁹

In addition, a large body of research demonstrates that more time online displaces physical activity⁶⁰ and is consistently correlated with minors' risk of obesity, which in turn increases their risk of serious illnesses like diabetes, high blood pressure, heart disease, and depression.⁶¹ Further, when minors spend more time online, they are exposed to more advertisements for

⁵³ Common Sense, *Screens and Sleep: The New Normal: Parents, Teens, Screens, and Sleep in the United States* at 7 (2019), <https://www.common sense media.org/sites/default/files/research/report/2019-new-normal-parents-teens-screens-and-sleep-united-states-report.pdf>.

⁵⁴ Emily Weinstein & Carrie James, *Behind Their Screens: What Teens Are Facing (And Adults Are Missing)*, MIT Press, at 38 (2022).

⁵⁵ Commonwealth of Massachusetts v. TikTok Inc., et al., No. 2484CV2638-BLS-1, Count 184 (Mass. Super. Ct. Feb. 3, 2025).

⁵⁶ Chloe Wilkinson et al., *Screen Time: The Effects on Children's Emotional, Social, and Cognitive Development* at 4 (2021), <https://informedfutures.org/wp-content/uploads/Screen-time-The-effects-on-childrens-emotional-social-cognitive-development.pdf>.

⁵⁷ *Heavy Social Media Use Linked to Poor Sleep*, BBC News (Oct. 23, 2019), <https://www.bbc.com/news/health-50140111>.

⁵⁸ *Among teens, sleep deprivation an epidemic*, Stanford News Ctr. (Oct. 8, 2015), <https://med.stanford.edu/news/all-news/2015/10/among-teens-sleep-deprivation-an-epidemic.html>.

⁵⁹ Commonwealth of Massachusetts v. TikTok Inc., et al., No. 2484CV2638-BLS-1, Count 316 (Mass. Super. Ct. Feb. 3, 2025).

⁶⁰ E de Jong et al., *Association Between TV Viewing, Computer Use and Overweight, Determinants and Competing Activities of Screen Time in 4- to 13-Year-Old Children*, 37 *Int'l J. Obesity* 47, 52 (2013), <https://pubmed.ncbi.nlm.nih.gov/22158265/>.

⁶¹ Jeff Chester, Kathryn C. Montgomery, et al., *Big Food, Big Tech, and the Global Childhood Obesity Pandemic* at 3 (2021), https://www.democraticmedia.org/sites/default/files/field/public-files/2021/full_report.pdf.

unhealthy food and beverages,⁶² which are heavily targeted toward minors⁶³ and disproportionately marketed to Black and Hispanic youth.⁶⁴ In addition, poor sleep quality—which, as discussed above, is associated with problematic internet use—increases the risk of childhood obesity by 20%.⁶⁵

Harms to Safety

The pressure to spend more time on digital media platforms and maximize interactions with other users also puts children at risk of predation. The National Center for Missing and Exploited Children and law enforcement officials have reported dramatically increasing rates of sextortion blackmail scams targeting teenagers on social media over the last two years.⁶⁶ Twenty-five percent of 9-to-17-year-olds report having had an online sexually explicit interaction with someone they believed to be an adult.⁶⁷ In 2020, 17% of minors – including 14% of 9-12-year-olds – reported having shared a nude photo or video of themselves online. Of these children and teens, 50% reported having shared a nude photo or video with someone they had not met in real life, and 41% reported sharing with someone over the age of 18.⁶⁸

Design features that maximize engagement also increase young people’s risk of cyberbullying. A 2022 survey by the Pew Research Center found that nearly 50% of teens reported being cyberbullied.⁶⁹ Sexual minority and gender expansive youth report being exposed to anonymous forms of cyberbullying more than their heterosexual and cisgender counterparts.⁷⁰

⁶² *Id.*

⁶³ Jeff Chester, Kathryn C. Montgomery, et al., *Big Food, Big Tech, and the Global Childhood Obesity Pandemic* at 3 (2021), https://www.democraticmedia.org/sites/default/files/field/public-files/2021/full_report.pdf.

⁶⁴ University of Connecticut Rudd Center for Food Policy & Health et. al., *Targeted Food and Beverage Advertising to Black and Hispanic Consumers: 2022 Update*, (Nov. 2022), <https://uconnruddcenter.org/wp-content/uploads/sites/2909/2022/11/TargetedMarketing2022-Executive-Summary.pdf>.

⁶⁵ Yanhui Wu et al., *Short Sleep Duration and Obesity Among Children: A Systematic Review and Meta-Analysis of Prospective Studies*, 11 *Obesity Rsch. & Clinical Prac.* 140, 148 (2015), <https://pubmed.ncbi.nlm.nih.gov/27269366/>; Michelle A. Miller et al., *Sleep Duration and Incidence of Obesity in Infants, Children, and Adolescents: A Systematic Review and Meta-Analysis of Prospective Studies*, 41 *Sleep* 1, 15 (2018), <https://pubmed.ncbi.nlm.nih.gov/29401314/>.

⁶⁶ National Center for Missing and Exploited Children, *Sextortion*, <https://www.missingkids.org/theissues/sextortion> (reporting that NCMEC received 186,800 reports of online enticement in 2023, and had already received 456,000 through October 2024); Chris Moody, *‘IDK what to do’: Thousands of teen boys are being extorted in sexting scams*, *Washington Post* (Oct. 2, 2023), <https://www.washingtonpost.com/parenting/2023/10/02/teen-boys-sextortion/>.

⁶⁷ Thorn. “Responding to Online Threats: Minors’ Perspectives on Disclosing, Reporting, and Blocking.” (May 2021), https://info.thorn.org/hubfs/Research/Responding%20to%20Online%20Threats_2021-Full-Report.pdf.

⁶⁸ Thorn. “Understanding sexually explicit images, self-produced by children.” (9 Dec. 2020), <https://www.thorn.org/blog/thorn-research-understanding-sexually-explicit-images-self-produced-by-children/>.

⁶⁹ Emily A. Vogels et. al., *Teens and Cyberbullying 2022*, Pew Research Center, (Dec. 2022), <https://www.pewresearch.org/internet/2022/12/15/teens-and-cyberbullying-2022/>.

⁷⁰ Bauman, S., & Baldasare, A., *Cyber aggression among college students: Demographic differences, predictors of distress, and the role of the university*, 56 *Journal of College Student Development* 317 (2015), <https://doi.org/10.1353/csd.2015.0039>.

Cyberbullying is linked to increased risky behaviors such as smoking and increased risk of suicidal ideation.⁷¹

It's worth noting that these serious threats to children's safety aren't limited to social media. In 2024, 80% of teens said harassment and bullying is a problem for teenagers playing video games, and 41% said they had been called an offensive name while playing a video game.⁷² The FTC's 2023 settlement with Epic Games documented how the default text and voice chat settings on Fortnite led children and teens to communicate with strangers, including adults. As a result, children were subject to harassment, bullying, and predation while playing the wildly popular game.⁷³

Most recently, AI chatbot technology – which has been integrated into social media platforms⁷⁴ but is also widely available to kids and teens as a standalone platform – has posed new risks of harm to young people. Character.AI's "companion" chatbots have discussed and encouraged dangerous topics with young users. A 14-year-old child died by suicide after discussing his plans with a chatbot version of a TV character, who told him to "come home" to her.⁷⁵ In a lawsuit filed in December, a Texas parent outlines the harmful conduct Character.AI chatbots suggested to her teenage son:

One chatbot brought up the idea of self-harm and cutting to cope with sadness. When he said that his parents limited his screen time, another bot suggested "they didn't deserve to have kids." Still others goaded him to fight his parents' rules, with one suggesting that murder could be an acceptable response.⁷⁶

Another parent in the same suit said Character.AI exposed her 11-year-old daughter to sexualized content for two years.⁷⁷

IV. The platforms where children spend the majority of their time online are designed to maximize engagement, often at the expense of children's wellbeing and safety.

Digital platforms are designed to maximize engagement. The longer a user is on a platform and the more they do on the platform, the more data the user generates. Tech companies and their

⁷¹van Geel M, Vedder P, Tanilon J. *Relationship Between Peer Victimization, Cyberbullying, and Suicide in Children and Adolescents: A Meta-analysis*, JAMA Pediatr. 2014;168(5):435–442. doi:10.1001/jamapediatrics.2013.4143 <https://jamanetwork.com/journals/jamapediatrics/fullarticle/1840250>.

⁷² Jeffrey Gottfried & Olivia Sidoti, *Teens and Video Games Today*, Pew Research Center (May 9, 2024), <https://www.pewresearch.org/internet/2024/05/09/teens-and-video-games-today/>.

⁷³Case 5:22-cv-00518-BO, *Epic Games: Complaint for Permanent Injunction*, (Dec. 19, 2022), https://www.ftc.gov/system/files/ftc_gov/pdf/2223087EpicGamesComplaint.pdf.

⁷⁴ Jocelyn Mintz, *Instagram's AI bots are often sexually suggestive—and sometimes underage*, (Feb. 13, 2025), <https://www.fastcompany.com/91276645/instagram-ai-bots-sexually-suggestive-underage>; *US FTC refers complaint about Snapchat use of AI chatbot to Justice Department*, Reuters (Jan. 16, 2025), <https://www.reuters.com/technology/us-ftc-refers-snapchat-complaint-over-ai-chatbot-justice-dept-2025-01-16/>;

⁷⁵ Kevin Roose, *Can A.I. Be Blamed for a Teen's Suicide?*, New York Times (Oct. 23, 2024), <https://www.nytimes.com/2024/10/23/technology/characterai-lawsuit-teen-suicide.html>.

⁷⁶ Nitasha Tiku, *An AI companion suggested he kill his parents. Now his mom is suing.*, Washington Post (Dec. 13, 2024), <https://www.washingtonpost.com/technology/2024/12/10/character-ai-lawsuit-teen-kill-parents-texas/>.

⁷⁷ *Id.*

marketing partners use this valuable data to target users with advertising.⁷⁸ Gaming app companies employ teams of experts who specialize in user acquisition and retention.⁷⁹ The major social media platforms – including Facebook, Instagram, YouTube, and TikTok – have both in-house and external research initiatives focused on documenting and improving engagement, as well as utilizing neuromarketing and virtual reality techniques to measure effectiveness.⁸⁰ For example, the Massachusetts Attorney General found that for TikTok, the “‘ultimate goal’ of its platform’s features is to ‘increase DAU (Daily Active Users): attract new users and retain existing users,’ increase ‘[a]pp playtime’ (i.e., the ‘[t]ime in minutes spent watching videos’), ‘video views,’ and ‘[i]nteractions: like, comment, share, etc.’”⁸¹

Engagement-maximizing design features prey upon minors’ developmental vulnerabilities and can lead to significant harm. These features create risk for children because they can lead to problematic internet use and the associated harm. In addition, many of the techniques used to extend engagement create new risks and harms in their own right. They include: social manipulation design features; variable reward design features; and algorithmic content recommendation systems.

Thanks to newly uncovered information gleaned through the release of unredacted complaints filed against TikTok and Meta, we now know that tech companies specifically target teen users with these problematic design features, that they are explicitly aware of the severe harms they are causing, and that they have deliberately chosen not to mitigate those harms.⁸²

Social manipulation design features

Social manipulation design features leverage a minor’s desire for social relationships to encourage users to spend more time and/or perform more activities on a website or service.

⁷⁸ See generally 5Rights Foundation. “Pathways: How digital design puts children at risk.” (July 2021), <https://5rightsfoundation.com/uploads/Pathways-how-digital-design-puts-children-at-risk.pdf>.

⁷⁹ See, e.g., *Leading User Acquisition in the quickly growing mobile games industry: Get to know Winnie Wen of Jam City*, Jam City (Nov. 15, 2021), <https://www.jamcity.com/leading-user-acquisition-in-the-quickly-growing-mobile-games-industry-get-to-know-winnie-wen-of-jam-city/>; *Mediation that supports everything your app business needs to scale*, ironSource, <https://www.is.com/mediation/>; Mihovil Grguric, *15 Key Mobile Game Metrics That Developers MUST Track*, udonis (Sept. 20, 2022), <https://www.blog.udonis.co/mobile-marketing/mobile-games/key-mobile-game-metrics>.

⁸⁰ See, e.g., *Meta Careers, Shape the Future of Marketing with the Marketing Science Team*, Meta (Sept. 19, 2018), <https://www.metacareers.com/life/come-build-with-the-facebook-marketing-science-team/>; Bob Arnold & Anton Miller, *How Google’s Media Lab Boosts YouTube Ad Results*, AdAge (May 14, 2021), <https://adage.com/article/google/how-googles-media-lab-boosts-youtube-ad-results/2335796>; *TikTok Insights*, TikTok for Business (2022), <https://www.tiktok.com/business/en-US/insights>; *TikTok Ads Break Through Better than TV and Drive Greater Audience Engagement*, TikTok for Business, <https://www.tiktok.com/business/library/TikTokDrivesGreaterAudienceEngagement.pdf>; *How Virtual Reality Facilitates Social Connection*, Meta, <https://www.facebook.com/business/news/insights/how-virtual-reality-facilitates-social-connection>.

⁸¹ *Commonwealth of Massachusetts v. TikTok Inc., et al.*, No. 2484CV2638-BLS-1, Count 192 (Mass. Super. Ct. Feb. 3, 2025).

⁸² *Commonwealth of Massachusetts v. TikTok Inc., et al.*, No. 2484CV2638-BLS-1 (Mass. Super. Ct. Feb. 3, 2025); *Commonwealth of Massachusetts v. Meta Platforms Inc. and Instagram, LLC*, No. 2384CV02397-bls1 (Mass. Super. Ct. Nov. 6, 2023)

These features are the hallmarks of social media platforms: follower, view, and like counts; interaction streaks; displays of the names of users who have commented, viewed, or liked a piece of content; “ephemeral” content that is only available for a limited time, including stories and livestreams; and prompts that encourage a user to share with a larger audience by adding suggested new friends or making their account or posts public.

Younger adolescents have specific developmental needs for social connectedness and are particularly attuned to social validation.⁸³ Children develop a need to fit in with their peers around age 6⁸⁴ and the need to be noticed and admired by others around age ten.⁸⁵ Social acceptance evokes activation in the brain’s reward center.⁸⁶ Further, minors’ prefrontal cortex, which helps regulate responses to social rewards, is not as mature as adults’.⁸⁷ These factors all converge to create a feedback loop in which, because minors crave this social reinforcement, they seek it out, and ultimately are unequipped with the tools to protect themselves against the allure of “rewards” that these manipulative design features purportedly promise.

Social manipulation design features also exploit young people’s tendency for social comparison and recreate, on a 24/7 basis, the high school cafeteria experience where everyone can instantly see who is popular and who is not. Features such as like and follower counts and comment displays induce anxiety in minors that they or their content may not be as popular as that of their peers. In the words of one high school student, “[I]f you get a lot of likes, then ‘Yay,’ you look relevant, but then if you don’t get a lot of likes and/or views, it can completely crush one’s confidence. Especially knowing that you’re not the only one who’s able to see it.”⁸⁸ Snapchat streaks literally quantify the strength of users’ relationships and create pressure on users to

⁸³ Nicholas D. Santer et al., *Early Adolescents’ Perspectives on Digital Privacy, Algorithmic Rights and Protections for Children* (2021) at 6, 30.

⁸⁴ In particular, between the ages of six and nine, children start to feel the need to fit in to peer social groups. See Jun Zhao et al., *‘I Make Up a Silly Name’: Understanding Children’s Perception of Privacy Risks Online*, CHI Conference on Human Factors in Computing Systems Proceedings (May 2, 2019), <https://doi.org/10.1145/3290605.3300336>.

⁸⁵ Zara Abrams, *Why Young Brains Are Especially Vulnerable to Social Media*, APA (Feb. 3, 2022), <https://www.apa.org/news/apa/2022/social-media-children-teens> (“Starting around age 10, children’s brains undergo a fundamental shift that spurs them to seek social rewards, including attention and approval from their peers.”).

⁸⁶ Eveline Crone & Elly A. Konijn, *Media Use and Brain Development During Adolescence*, 9 *Nature Comm.* 1, 4 (2018), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5821838/>.

⁸⁷ For example, adults “tend to have a fixed sense of self that relies less on feedback from peers” and “adults have a more mature prefrontal cortex, an area that can help regulate emotional responses to social rewards.” Zara Abrams, *Why Young Brains Are Especially Vulnerable to Social Media*, APA (Feb. 3, 2022), <https://www.apa.org/news/apa/2022/social-media-children-teens>.

⁸⁸ Katie Joseff, *Social Media Is Doing More Harm than Good*, Common Sense Media (Dec. 17, 2021), <https://www.commonsensemedia.org/kids-action/articles/social-media-is-doing-more-harm-than-good>.

communicate with their friends on the app daily.⁸⁹ Teens report feeling obligated to maintain Snapstreaks to “feel more popular” and show that they “care about that person.”⁹⁰

Ultimately, these design features create strong incentives for young people to engage in potentially harmful behaviors. Their drive for social rewards “lead[s] to greater relinquishing of security in certain arenas to gain social validation and belonging, for example, disclosing publicly to participate in online communities and accrue large amounts of likes, comments, and followers.”⁹¹ Young users quickly learn that they can improve their social media metrics by posting frequently and posting particularly provocative or risqué content.⁹² Such posts can increase the risk of cyberbullying and sexual exploitation. In addition, the pressure to demonstrate popularity through high friend, follower, and like counts can lead children to accept friend requests from strangers, putting them at risk of predation.

Tech companies are acutely aware of the power these design features have over children and teens, and they weaponize them with precision. For example, the unredacted Massachusetts Complaint against Instagram revealed that Meta purposefully researched growth opportunities within its “Teen Ecosystem,” and determined that it can capitalize on teens’ “especially plastic” minds to design product features that increase total “teen time spent” on its platforms.⁹³ Meta specifically relies on children’s increased tolerance for “push” notifications to create a psychological environment in which teens are programmed to come back to Meta’s products “over and over” in hopes of receiving positive social validation.⁹⁴ Across Meta’s social media products, children and teens receive a staggering 237 notifications per day.⁹⁵

Meta is aware that its design features cause real harm to children and teens, but has repeatedly chosen not to act. For example, Meta conducted an internal study which found a link between ‘Like’ counts and “constant negative comparisons.”⁹⁶ Researchers at Meta further linked those negative social comparisons “to multiple negative well-being outcomes” such as increased loneliness, worse body image, and negative mood.⁹⁷ As a result, Meta ran a test program called

⁸⁹ Taylor Lorenz, *Teens Explain the World of Snapchat’s Addictive Streaks, Where Friendships Live or Die*, Insider (Apr. 14, 2017, 1:58 PM), <https://www.insider.com/teens-explain-snapchat-streaks-why-theyre-so-addictive-and-important-to-friendships-2017-4>; Lori Janjigian, *What I Learned After Taking Over My 13-Year-Old Sister’s Snapchat for Two Weeks*, Business Insider (Aug. 4, 2016, 11:53 AM), <https://www.businessinsider.com/how-teens-are-using-snapchat-in-2016>.

⁹⁰ *Id.*

⁹¹ Nicholas D. Santer et al., *Early Adolescents’ Perspectives on Digital Privacy, Algorithmic Rights and Protections for Children* (2021) at 6 (citing J.C. Yau & S. M. Reich, “It’s Just a Lot of Work”: Adolescents’ Self-Presentation Norms and Practices on Facebook and Instagram, 29 J. Res. on Adolescence 196, 196-209 (2019)).

⁹² For example, Adolescent girls report feeling pressure to post sexualized selfies as a means of generating attention and social acceptance from their peers. Macheroni, G., Vincent, J., Jimenez, E. ‘Girls Are Addicted to Likes so They Post Semi-Naked Selfies’: Peer Mediation, Normativity and the Construction of Identity Online, 9 *Cyberpsychology: Journal of Psychosocial Research on Cyberspace* (May 1, 2015), <https://doi.org/10.5817/CP2015-1-5>.

⁹³ Commonwealth of Massachusetts v. Meta Platforms Inc. and Instagram, LLC, No. 2384CV02397-bls1, Count 76-78, 167 (Mass. Super. Ct. Nov. 6, 2023).

⁹⁴ *Id.* at Count 91.

⁹⁵ *Id.* at Count 92.

⁹⁶ *Id.* at Count 202.

⁹⁷ *Id.* at Count 203.

“Project Daisy,” in which it hid visible “Like” counts from a subset of users on Instagram.⁹⁸ In doing so, researchers found that Project Daisy was effective in reducing users’ experiences of negative social comparison, and had a “statistically significant impact” on young users’ well-being.⁹⁹

But after concluding that “Like” counts harm youth, and that Project Daisy could improve the health and wellbeing of children and teen users, Meta chose not to implement the program, defunded the team that conducted the research project, and still retains its visible “Like” features by default on Instagram to this day.¹⁰⁰

Similarly, TikTok’s “Hide Interaction Count” research found that “[t]he core user experience emphasizes and celebrates like and comment count, which can leave people without them feeling self-conscious, jealous, and bitter.”¹⁰¹ TikTok knows its quantified popularity displays harm teenagers by contributing to FOMO, ultimately extending time online and “creat[ing] enormous pressures for young people’ that induce ‘anxiety, low self-esteem and mental health issues,’” including harm to body image.¹⁰² Despite this internal research, TikTok continues to use social manipulation design features to extend young users’ time on its platform.

Variable reward design features

One objective of persuasive design is to reduce friction so that platforms are easier to use, and so young people will keep using them. Low-friction variable rewards are highly effective at maximizing the amount of time users spend on the service. The psychology that renders these features effective is based on research that predates the internet by many years, beginning with experiments by renowned psychologist B.F. Skinner in the early 20th century.¹⁰³ Research by Skinner and others revealed that when test subjects – both humans and other animals – are rewarded unpredictably for a given action, they will engage in the action for a longer period of time than if the reward is predictable.¹⁰⁴ Specifically, the brain generates more dopamine in response to an uncertain reward than in response to an expected and reliable one.¹⁰⁵ The tendency of variable rewards to drive compulsive behavior is sometimes referred to as the

⁹⁸ *Id.* at Count 204.

⁹⁹ *Id.* at Count 207-208.

¹⁰⁰ *Id.* at Count 210-211.

¹⁰¹ Commonwealth of Massachusetts v. TikTok Inc., et al., No. 2484CV2638-BLS-1, Count 153 (Mass. Super. Ct. Feb. 3, 2025).

¹⁰² *Id.* at Count 154.

¹⁰³ J. E. Staddon & D. T. Cerutti, *Operant Conditioning*, 54 Annual Review of Psychology 115 (2003), <https://doi.org/10.1146/annurev.psych.54.101601.145124>; B. F. Skinner, *Two Types of Conditioned Reflex: A Reply to Konorski and Miller*, 16 J. Gen. Psychology, 272 (1937), <https://doi.org/10.1080/00221309.1937.9917951>.

¹⁰⁴ Laura MacPherson, *A Deep Dive into Variable Designs and How to Use Them*, DesignLi (Nov. 8, 2018), <https://designli.co/blog/a-deep-dive-on-variable-rewards-and-how-to-use-them/>; Mike Brooks, *The “Vegas Effect” of Our Screens*, Psychol. Today (Jan. 4, 2019), <https://www.psychologytoday.com/us/blog/tech-happy-life/201901/the-vegas-effect-our-screens>.

¹⁰⁵ Anna Hartford & Dan J. Stein, *Attentional Harms and Digital Inequalities*, 9 JMIR Mental Health 2, 3 (Feb. 11, 2022), <https://pubmed.ncbi.nlm.nih.gov/35147504/>.

“Vegas Effect,” and is the primary mechanism at work in slot machines.¹⁰⁶ In the words of Nir Eyal, a consumer psychology expert who wrote the popular industry how-to *Hooked: How to Build Habit-Forming Products*, “[v]ariable schedules of reward are one of the most powerful tools that companies use to hook users.”¹⁰⁷

One common example of variable rewards design features is the infinite or endless scroll mechanism with variable content. When a platform uses endless scroll, a user is continuously fed new pieces of content as they scroll down a feed or page, and they never know what might appear next. Harvard researchers Emily Weinstein and Carrie James explain in their recent book on teens and technology: “Apps like TikTok have an endless database of content to offer users. Some videos are pointless or boring or upsetting; others give a fleeting reward in the form of funny, relatable, or compelling content.”¹⁰⁸ The pursuit of the next “rewarding” piece of content keeps users scrolling. As one 16-year-old told Weinstein and James, Snapchat is “so addictive because it’s so easy to go on to the next thing.... And you never know what amazing thing could be on the next Story, and all you have to do is tap once and you get to the next thing.”¹⁰⁹

All popular social media platforms, including those used heavily by minors such as TikTok, Snapchat, Instagram, and Facebook, feature endless scroll feeds strategically designed to intermittently surface content that users are algorithmically predicted to engage with. An internal TikTok document said that the app maximizes for two metrics: user retention and time spent.¹¹⁰ Similarly, a product manager for YouTube’s recommendation system explained that the platform’s recommendation algorithm “is designed to do two things: match users with videos they’re most likely to watch and enjoy, and . . . recommend videos that make them happy. . . . [S]o our viewers keep coming back to YouTube, because they know that they’ll find videos that they like there.”¹¹¹ And Adam Mosseri of Instagram said, “[W]e make a set of predictions. These are educated guesses at how likely you are to interact with a post in different ways.... The more likely you are to take an action, and the more heavily we weigh that action, the higher up you’ll see the post.”¹¹²

¹⁰⁶ Mike Brooks, *The “Vegas Effect” of Our Screens*, Psychol. Today (Jan. 4, 2019), <https://www.psychologytoday.com/us/blog/tech-happy-life/201901/the-vegas-effect-our-screens>.

¹⁰⁷ Nir Eyal, *The Hook Model: How to Manufacture Desire in 4 Steps*, Nir and Far, <https://www.nirandfar.com/how-to-manufacture-desire/>.

¹⁰⁸ Emily Weinstein & Carrie James, *Behind Their Screens: What Teens Are Facing (And Adults Are Missing)*, MIT Press, at 33 (2022); see also GCFGlobal.org, *Digital Media Literacy: Why We Can’t Stop Scrolling*, <https://edu.gcfglobal.org/en/digital-media-literacy/why-we-cant-stop-scrolling/1/>.

¹⁰⁹ *Id.* at 34.

¹¹⁰ Ben Smith, *How TikTok Reads Your Mind*, New York Times, (Dec. 5, 2021), <https://www.nytimes.com/2021/12/05/business/media/tiktok-algorithm.html>.

¹¹¹ Creator Insider, *Behind the Algorithms - How Search and Discovery Works on YouTube*, YouTube (Apr. 16, 2021), <https://youtu.be/9Fn79qJa2Fc>.

¹¹² Adam Mosseri, *Shedding More Light on How Instagram Works*, Instagram (June 8, 2021), <https://about.instagram.com/blog/announcements/shedding-more-light-on-how-instagram-works>.

Tech companies know that variable rewards are a valuable tool to increase users' activity and time spent online and ultimately, to maximize profits. But they are similarly aware of the risks associated with these types of rewards. For example, in 2020, responding to internal research indicating that teen users had difficulty controlling their use of Facebook and Instagram, a Meta employee wrote to a colleague: "I worry that the driving [users to engage in more frequent] sessions incentivizes us to make our product more addictive, without providing much more value... Intermittent rewards are the most effective (think slot machines), reinforcing behaviors that become especially hard to extinguish."¹¹³ Ultimately, these sophisticated variable reward techniques prey upon minors' developmental sensitivity to rewards.

Algorithmic content recommendation systems

Algorithms designed to maximize engagement fill young people's feeds with the content that is most likely to keep them online, even when that means exposing them to a post, image, or video that is dangerous or abusive. Platforms such as YouTube, TikTok, and Instagram serve users content based on automated suggestions. Algorithms choose which content to suggest to children and teens based on the vast amount of data they collect on users, such as likes, shares, comments, interests, geolocation, and information about the videos a user watches and for how long. As described above, these algorithms are designed to extend engagement by discerning which pieces of content a user is most likely to engage with – not whether the content or overall online experience is beneficial to the user.¹¹⁴

Algorithmic recommendations can be particularly dangerous when they target children and teens' greatest vulnerabilities. Investigations have repeatedly demonstrated the way social media feeds deliver harmful mental health and eating disorder content to accounts registered to minors. A December 2024 report by the Center for Countering Digital Hate (CCDH) documented the way YouTube's algorithm pushed their test account (registered to a 13-year-old girl in the U.S.) down a rabbit hole of eating disorder content.¹¹⁵ Researchers simulated the account watching 1,000 videos, and by the end of their experiment, 1 in 3 videos watched were categorized as eating disorder content, and 2 in 3 videos were categorized as either eating disorder or weight loss content.¹¹⁶ Another CCDH report found that newly created TikTok accounts registered to teenagers that watched or liked videos about body image, mental health, or eating disorders received videos in their For You feed related to self-harm, suicide, or eating disorders within minutes.¹¹⁷ These videos appeared on the accounts' For You feeds every 206

¹¹³ Spence v. Meta Platforms, N.D. Cal. Case No. 3:22-cv-03294 at 82 (June 6, 2022) (citing Facebook Papers: "Teen Girls Body Image and Social Comparison on Instagram – An Exploratory Study in the US" (March 2020), at p. 8).

¹¹⁴ A former YouTube engineer observed: "recommendations are designed to optimize watch time, there is no reason that it shows content that is actually good for kids. It might sometimes, but if it does, it is coincidence." Orphanides, K.G. "Children's YouTube is still churning out blood, suicide and cannibalism." *Wired*, (March 23, 2018), <https://www.wired.co.uk/article/youtube-for-kids-videos-problems-algorithm-recommend>

¹¹⁵ Center for Countering Digital Hate, *Youtube's Anorexia Algorithm: How Youtube Recommends Eating Disorders Videos to Young Girls* (December 2024), https://counterhate.com/wp-content/uploads/2024/12/CCDH.YoutubeED.Nov24.Report_FINAL.pdf.

¹¹⁶ *Id.* at 16.

¹¹⁷ Center for Countering Digital Hate, *Deadly by Design: Tik Tok Pushes Harmful Content Promoting Eating Disorders and Self-harm into users' feeds*, (Dec. 15, 2022), <https://counterhate.com/research/deadly-by-design/>

seconds on average. CCDH also studied the For You feeds of newly created TikTok accounts registered to teenagers that included the phrase “loseweight” in their usernames. Those accounts received videos about self-harm, suicide, or eating disorders in their For You feeds every 66 seconds on average.¹¹⁸

Revelations from Meta whistleblower Arturo Béjar show that the results on Meta’s platforms are similarly frightening. Meta relies on extensive internal survey data reported in its “Bad Experiences & Encounters Framework (BEEF)” to analyze the frequency with which young users are shown content that violates its community standards, such as content related to suicide, self-harm, harassment, bullying, and hate speech.¹¹⁹ The BEEF survey results showed that in 2021, nearly 17% of Instagram users aged 13-15 had seen content relating to self-harm within the last seven days.¹²⁰ For users of similar ages, nearly 50 % reported witnessing bullying on the platform within the last seven days, and nearly 22% of 13-15 year-old users said they were the target of bullying.¹²¹ Despite these facts, Meta chose to use “distorted metrics” such as prevalence statistics to intentionally create a misleading picture of the harmfulness of its platforms.¹²²

Other reports have made similar findings: A 2021 *Wall Street Journal* investigation documented how TikTok users were served videos that encouraged eating disorders and discussed suicide.¹²³ The same year, Senator Richard Blumenthal’s office created an account for a fake 13-year-old girl that “liked” content about dieting, and the account was served pro-eating disorder and self-harm content within 24 hours.¹²⁴ Young users’ engagement with this harmful content is valuable to tech companies: Our 2022 report detailed how Meta profits from 90,000 unique pro-eating disorder accounts that reach 20 million people, one-third of whom are minors, some as young as nine.¹²⁵

Content recommendation algorithms also expose minors to videos of dangerous viral “challenges,” which has tragically led to the serious injury and death of many young people. For example, media reports have documented how “the blackout challenge” on TikTok, in which young people hold their breath or choke themselves until they pass out, is responsible for the

¹¹⁸ *Id.*

¹¹⁹ Commonwealth of Massachusetts v. Meta Platforms Inc. and Instagram, LLC, No. 2384CV02397-bls1, Count 272-274 (Mass. Super. Ct. Nov. 6, 2023).

¹²⁰ *Id.* at Counts 281-282.

¹²¹ *Id.*

¹²² *Id.* at Counts 292-296.

¹²³ Wall Street Journal Staff, *Inside TikTok’s Algorithm: A WSJ Video Investigation*, Wall Street Journal, (July 21, 2021), <https://www.wsj.com/articles/tiktok-algorithm-video-investigation-11626877477>.

¹²⁴ Nihal Krishan, *Senate office impersonates 13-year-old girl on Instagram to flag eating disorder content*, Yahoo News, (Sep. 30 2021), <https://www.yahoo.com/entertainment/senate-office-impersonates-13-old-212700515.html>.

¹²⁵ Fairplay, *Designing for Disorder: Instagram’s Pro-eating Disorder Bubble* at 1 (Apr. 2022), https://fairplayforkids.org/wp-content/uploads/2022/04/designing_for_disorder.pdf.

deaths of several children.¹²⁶ Many families say that their children learned about the challenge through recommended videos on their For You feeds.¹²⁷

V. Apps, websites, and platforms target children with unfair surveillance advertising and influencer marketing techniques.

Digital platforms also harm children and teens through unfair digital advertising practices, including surveillance advertising and influencer marketing. These techniques make it harder for young people to recognize content as advertising designed to influence their behaviors and defend themselves against it, rendering them vulnerable to the influence of corporate actors that can collect and utilize data to target them with precision.

Children face pervasive and inappropriate advertising from a young age: According to one study, more than 95% of early childhood videos on YouTube contain ads, and one in five videos viewed by children 8 and under contained ads that were not age-appropriate, such as ads that featured violent or sexualized content.¹²⁸ Researchers have also found a high rate of age-inappropriate advertisements on preschool apps¹²⁹ and have found that the educational potential of children's apps is severely degraded by the high number of disruptive ads that appear, particularly on free apps that are more likely to be used by low-income children.¹³⁰

Surveillance advertising

Surveillance advertising – targeted advertising using personal data collected by websites and platforms – is the dominant form of marketing online. Programmatic data-driven advertising accounted for 90% of display ads in the U.S. last year.¹³¹ This pervasive form of advertising draws on massive amounts of data about young people. By some estimates, advertisers already possess over 13 million data points about a child by the time they turn 13, despite the fact that the Children's Online Privacy Protection Act (COPPA) requires parental permission before

¹²⁶Olivia Carville, *TikTok's Viral Challenges Keep Luring Young Kids to Their Deaths*, Bloomberg, (Nov. 30, 2022), <https://www.bloomberg.com/news/features/2022-11-30/is-tiktok-responsible-if-kids-die-doing-dangerous-viral-challenges>; Anne Marie Lee, *Child deaths blamed on TikTok 'blackout challenge' spark outcry*, CBS News, (Aug. 19, 2021), <https://www.cbsnews.com/news/tik-tok-blackout-challenge-child-deaths/>.

¹²⁷Michael Levenson and April Rubin, *Parents Sue TikTok, Saying Children Died After Viewing 'Blackout Challenge'*, New York Times, (July 6, 2022), <https://www.nytimes.com/2022/07/06/technology/tiktok-blackout-challenge-deaths.html>.

¹²⁸Radesky, J. S., Schaller, A., Yeo, S. L., Weeks, H. M., & Robb, M.B. "Young kids and YouTube: How ads, toys, and games dominate viewing." *Common Sense Media*, (2020), https://d2e111jq13me73.cloudfront.net/sites/default/files/uploads/research/2020_youngkidsyoutube-report_final-release_forweb.pdf.

¹²⁹Meyer M, Adkins V, Yuan N, Weeks HM, Chang YJ, Radesky J. "Advertising in Young Children's Apps: A Content Analysis." *J Dev Behav Pediatr*, (Jan. 2019), <https://pubmed.ncbi.nlm.nih.gov/30371646/>.

¹³⁰Meyer, M., Zosh, J.M., McLaren, C., Robb, M., McCaffery, H., Golinkoff, R.M., Hirsh-Pasek, K., & Radesky, J. "How educational are "educational" apps for young children? App store content analysis using the Four Pillars of Learning framework." *Journal of Children and Media*, (2021), <https://www.tandfonline.com/doi/abs/10.1080/17482798.2021.1882516?journalCode=rchm20>.

¹³¹Meaghan Yuen, *Programmatic Digital Display Advertising in 2022: Ad Spend, Formats, and Forecast*, Insider Intelligence (May 23, 2022), <https://www.insiderintelligence.com/insights/programmatic-digital-display-ad-spending/>.

sharing the personal information of children 12 and under with advertisers.¹³² These data are drawn from countless daily activities, including web surfing, interacting with friends on social media, and recording messages and exchanging images and other communications on computers, phones, and tablets.¹³³ Smart home technologies allow companies to collect data on a young person's home life; extended reality (virtual, augmented, and mixed reality) devices can collect unique biometric data.

Kids and teens cannot appreciate the depth and breadth of these data collection systems, nor the way they are used to target them with precision. Younger children largely think about privacy in interpersonal terms, such as the ability to be left alone and control access to physical places.¹³⁴ As children get older, they may start to think about privacy in terms of freedom from surveillance at school or by the government, but they do not think about privacy in the sense that companies might use information about them to influence their purchasing choices, for example.¹³⁵

Ultimately, surveillance ads are inherently unfair when targeted to children. As Fairplay, Global Action Plan, and Reset Australia described in a report about Facebook:

On the one side is a child, poorly equipped to distinguish between advertising and information, especially within digital contexts. On the other, Facebook with its vast troves of data about the child, including but not limited to their browsing history, mood, insecurities, their peers' interests, and more. This power imbalance makes surveillance advertising inherently more manipulative than contextual digital advertising, let alone traditional analogue advertising.¹³⁶

As with algorithmically recommended content, surveillance ads can be used to target and exacerbate young people's vulnerabilities. Leaked documents from Facebook revealed in 2017 that the company told advertisers it could help them target teens at moments when they are feeling specific emotions, such as "silly," "defeated," "overwhelmed," "useless" and "a failure."¹³⁷

¹³² SuperAwesome Launches Kid-Safe Filter to Prevent Online Ads from Stealing Children's Personal Data, SuperAwesome (Dec. 6, 2018),

<https://www.superawesome.com/superawesome-launches-kid-safe-filter-to-prevent-online-ads-from-stealing-childrens-personal-data/>.

¹³³ Wolfie Christl, *Corporate Surveillance in Everyday Life: How Companies Collect, Combine, Analyze, Trade, and Use Personal Data on Billions*, Cracked Labs (June 2017),

https://crackedlabs.org/dl/CrackedLabs_Christl_CorporateSurveillance.pdf.

¹³⁴ Kaiwen Sun et al., *They See You're a Girl if You Pick a Pink Robot with a Skirt: A Qualitative Study of How Children Conceptualize Data Processing and Digital Privacy Risks*, CHI Conference on Human Factors in Computing Systems (May 2021), <https://dblp.org/rec/conf/chi/SunSASGRS21>; Priya Kumar et al., *No Telling Passcodes Out Because They're Private: Understanding Children's Mental Models of Privacy and Security Online*, 1 Proceedings of the ACM on Human-Computer Interaction 64, (Nov. 2017),

<https://pearl.umd.edu/wp-content/uploads/2017/08/kumar-et-al-2018-CSCW-Online-First.pdf>.

¹³⁵ Mariya Stoilova et al., *Digital by Default: Children's Capacity to Understand and Manage Online Data and Privacy*, 8 Media and Comm'n 197, 200, (2020), <http://dx.doi.org/10.17645/mac.v8i4.3407>.

¹³⁶ Yi-ching Ho, E., Farthing, R., *How Facebook still targets surveillance ads to teens*, Reset Australia, Fairplay, and Global Action Plan (Nov. 2021), <https://fairplayforkids.org/wp-content/uploads/2021/11/fbsurveillancereport.pdf>.

¹³⁷ Sam Machkovech, *Report: Facebook Helped Advertisers Target Teens Who Feel "Worthless"*, ArsTechnica (May 1, 2017),

Facebook Australia told advertisers it could specify when teens are likely to experience certain moods, sharing that “earlier in the week, teens post more about ‘anticipatory emotions’ and ‘building confidence,’ while weekend teen posts contain more ‘reflective emotions’ and ‘achievement broadcasting.’”¹³⁸

This capability allows marketers to target vulnerable young people with ads for harmful products. Ads for risky “Flat Tummy Teas” and dangerous exercise routines target young women on Instagram. Early digital marketing campaigns for Juul vaping products were deliberately targeted at young audiences.¹³⁹ Researchers were able to target ads to teenagers on Facebook based on their interests in gambling, alcohol, and dieting.¹⁴⁰ While Meta announced in 2021 that they were restricting advertisers’ ability to target teens based on their interests, this change was misleading, as the company’s ad targeting algorithm still used the data it collected on young people to determine who is most likely to be vulnerable to a given ad.¹⁴¹

Even in cases where the products aren’t as harmful as alcohol or dieting aids, surveillance advertising exploits children. As Common Sense notes, “Kids may be profiled as gamers, impulsive purchasers, or anxious overshareers – and then unfairly targeted by ads that encourage more of these things.”¹⁴²

Influencer marketing

Product placement and host-selling are not permitted on children’s television, where regulations require clear separation between content that is advertising and content that is not. The online marketing ecosystem does not have similar rules, and as a result, advertising and entertainment and informational content are deeply intertwined.

One of the ways that marketers reach kids and teens online is by advertising products through influencers and trusted fictional characters. This method of advertising is highly appealing to marketers because it is seen as more “authentic” and it capitalizes on the relationships that kids

<https://arstechnica.com/information-technology/2017/05/facebook-helped-advertisers-target-teens-who-feel-worthless/>.

¹³⁸ *Id.*

¹³⁹ Jidong Huang et al., *Vaping versus JUULing: how the extraordinary growth and marketing of JUUL transformed the US retail e-cigarette market*, 28 *Tobacco Control* 146, 150 (Feb. 22, 2019), <https://doi.org/10.1136%2Ftobaccocontrol-2018-054382> (“JUUL was one of the first major retail e-cigarette brands that relied heavily on social media to market and promote its products.”); Julia Cen Chen-Sankey et al., *E-cigarette Marketing Exposure and Subsequent Experimentation Among Youth and Young Adults*, 144 *Pediatrics* at 8 (Nov. 2019), <https://doi.org/10.1542/peds.2019-1119>; see also Erik Larson et al., *Juul Reaches \$439 Million Settlement Over Marketing to Kids*, *Bloomberg Law*, (Sept. 6, 2022), <https://news.bloomberglaw.com/health-law-and-business/juul-reaches-439-million-multi-state-settlement-over-marketing>.

¹⁴⁰ Farthing, Rys, et al., *Profiling Children for Advertising: Facebook’s Monetisation of Young People’s Personal Data*, *Reset Australia*, (April 2021), https://au.reset.tech/uploads/resettechaustralia_profiling-children-for-advertising-1.pdf.

¹⁴¹ *Id.* In February 2023, Meta announced yet another change to its ad targeting for teens and now claims it will not use teens interests or online activities at all for the targeting of ads to minors. As of this writing, Fairplay has not had the opportunity to verify this claim.

¹⁴² Joseph Jerome and Ariel Fox Johnson, *AdTech and Kids: Behavioral Ads Need a Time-Out*, *Common Sense*, (2021), <https://d2e111jq13me73.cloudfront.net/sites/default/files/uploads/AdTech%20and%20Kids.pdf>.

and teens form with the characters and media figures they see online. This advertising sector is huge and getting bigger. Market research shows that influencer marketing is currently growing by billions of dollars annually.¹⁴³ Influencer marketing reaches even the youngest kids online: “kidfluencers” on YouTube receive millions of views on videos of themselves unboxing and showing off new toys from brands and marketers.

Research demonstrates that influencer marketing overcomes children and teenagers’ nascent cognitive ability to understand and defend themselves against advertising. For example, young people identify closely with these media characters and figures and develop feelings or friendships known as parasocial relationships.¹⁴⁴ As a result of these relationships, kids and teens have difficulty responding to content from a beloved character or creator as an advertisement,¹⁴⁵ and can therefore be unduly influenced by marketers. As Fairplay outlined in its comments to the Federal Trade Commission last year, the existing system of disclosures – even when it is followed – does very little to alert kids and teens to the massive amounts of advertising content they encounter online every day.¹⁴⁶

This form of stealth marketing negatively impacts kids and teens. Children who watch unboxing videos are more likely to nag their parents for products and throw a tantrum if the answer is “no” than when they watch regular commercials.¹⁴⁷ In internal Meta research leaked by Frances Haugen, teens specified that influencers and their materialistic, over-the-top “money for nothing” – or effortlessly rich – lifestyles triggered social comparisons and contributed to young people feeling bad about themselves. The research emphasized the cumulative effect of influencer marketing: “However, users report seeing multiple pieces of content from celebrities and influencers in each app session, multiplying their effect. In addition, their friends mimic

¹⁴³ Traackr, *2022 Influencer Marketing Impact Report* at 2, (2022), <https://www.traackr.com/content/influencermarketing-impact-report-2022>; *State of Influencer Marketing 2022*, Influencer Marketing Hub at 10, (2022), https://influencermarketinghub.com/ebooks/Influencer_Marketing_Benchmark_Report_2022.pdf.

¹⁴⁴ Amanda N. Tolbert & Kristin L. Drogos, *Tweens’ Wishful Identification and Parasocial Relationships With YouTubers*, 10 *Frontiers In Psychology* 1, (2019), <https://www.frontiersin.org/articles/10.3389/fpsyg.2019.02781/full>; Frans Folkvord, K.E. Bevelander & Esther Rozendaal, et al., *Children’s bonding with popular YouTube vloggers and their attitudes toward brand and product endorsements in vlogs: an explorative study*, 20 *Young Consumers Insight And Ideas For Responsible Marketers* (2019), <https://doi.org/10.1108/YC-12-2018-0896>.

¹⁴⁵ Emmelyn Croes & Jos Bartels, *Young adults’ motivations for following social influencers and their relationship to identification and buying behavior*, 125 *Computers In Human Behavior* at 7, (2021), <https://doi.org/10.1016/j.chb.2021.106910>; 4 Brigitte Naderer, Jörg Matthes & Stephanie Schäfer, *Effects of disclosing ads on Instagram: the moderating impact of similarity to the influencer*, 40 *International Journal of Advertising* 686, 687-88 (2021).

¹⁴⁶ See generally Comments of Fairplay, Alexander Neville Foundation, et al. in the Matter of Protecting Kids from Stealth Advertising in Digital Media (filed July 18, 2022), <https://fairplayforkids.org/wp-content/uploads/2022/07/influencer-comments.pdf>.

¹⁴⁷ Harsha Gangadharbatla & Deepti Khedekar, *The Role of Parental Mediation and Persuasion Knowledge in Children’s Consumption of Unboxing Videos*, 22 *Advertising & Society Quarterly* (2021), <https://muse.jhu.edu/article/813891>.

celebrities' beauty and fashion standards, further compounding the effects of one piece of content."¹⁴⁸

VI. Vermont must take action to protect young people online.

When kids are in digital spaces for learning, socializing, and relaxing, they deserve the opportunity for the most positive experience, designed in a way that understands and supports their unique ways of seeing the world. They should be able to explore in developmentally appropriate ways without being manipulated into spending more time or targeted by algorithms that amplify harmful content.

We cannot continue to hope that tech platforms will unilaterally disarm in the race for young people's valuable attention. Nor can we expect young people to extract themselves from the exploitative platforms where their friends are, or expect overworked parents to navigate confusing settings across multiple platforms and monitor every moment their kids are online.

The last time Congress passed a law to protect children online was over 25 years ago. The digital landscape has changed dramatically, in many unforeseen ways, since the passage of the Children's Online Privacy Protection Act in 1998 when smart phones, YouTube, social media, multiplayer gaming with voice chat, and virtual reality didn't even exist. In addition, COPPA only covers children until they turn 13 and has failed to effectively keep kids ages 12 and under off of platforms like Snapchat, Instagram and TikTok, leaving significant demographics vulnerable to exploitation and harm. We continue to push for stronger federal protections for kids and teens. In the absence of federal action, states can and should pass laws to regulate Big Tech in order to better protect kids and teens in today's digital world.

Critically, the Vermont Age Appropriate Design Code would:

1. Apply to all businesses that are reasonably likely to be accessed by children and that collect and process consumers' personal data
2. Define a "covered minor" as anyone under the age of 18, ensuring the privacy protections of the code apply to children and teens
3. Create a minimum duty of care requiring companies to ensure that their design and use of a covered minor's personal data does not result in:
 - a. Reasonably foreseeable emotional distress;
 - b. Reasonably foreseeable compulsive use; or
 - c. Discrimination based upon race, ethnicity, sex, disability, sexual orientation, gender identity, gender expression, or national origin

¹⁴⁸ The Wall Street Journal, *Teen Girls Body Image and Social Comparison on Instagram – An Exploratory Study in the U.S.*, (Sep. 29, 2021) <https://s.wsj.net/public/resources/documents/teen-girls-body-image-and-social-comparison-on-instagram.pdf>.

4. Require companies to ensure that the media a minor sees as a result of the platform's design or use of personal data does not establish emotional distress or compulsive use.
5. Require minors' privacy and account settings to be on the most privacy protective by default, rather than putting the onus on families to navigate a maze of confusing settings just to have a safer, more age-appropriate experience. This includes:
 - a. Turning off push notifications for minors by default
 - b. Preventing adults from viewing or interacting with a minor's personal data unless the minor has affirmatively permitted it by default
6. Mandate privacy and data protection by requiring companies to limit the collection, sale, storage, and retention of minors' personal data, including geolocation data, to the purpose for which the data was collected
7. Prohibit the use of personal data to select, recommend, or prioritize media for a minor, except for search results or based on accounts, users, feeds, categories, or characteristics the minor has selected.
8. Mandate transparency reports that explain the purpose and use of algorithmic recommendation systems, including explanations of the purpose of using personalized recommendation systems at all; the types of personal data used in those systems; and information about with whom the personal data is shared and how long it is retained.
9. Prohibit sending minors push notifications between 12:00 a.m. and 6:00 a.m.

Last year, the US Senate passed major online safety and privacy legislation by an incredible 91-3 vote. But even with that incredible bipartisan support, Big Tech was able to stop the bill from advancing in the House. And now with Big Tech CEOs cozying up to the President and so much chaos in Washington, the fate of new federal online protections for kids is more uncertain than ever. Vermont's children cannot wait another twenty five years or even two for Congress to prioritize their wellbeing over social media company profits. With the Age Appropriate Design Code and the phone-free schools legislation before the Vermont legislature, our state has an opportunity to lead the nation in online protections for children and teens in 2025. And we can do it while protecting free speech and avoiding the draconian and probably impractical social media bans that some states are implementing.

Thank you again for having me here today and I look forward to discussing all of this with you.