



Richard Freed

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Child and adolescent psychologist, and the author of "Wired Child: Reclaiming Childhood in a Digital Age"

Mar 12 · 24 min read

## The Tech Industry's War on Kids

How psychology is being used as a weapon against children



Donald Iain Smith/Blend Images/Getty Images

**W**e called the police because she wrecked her room and hit her mom... all because we took her phone," Kelly's father explained. He said that when the police arrived that evening, Kelly was distraught and told an officer that she wanted to kill herself. So an ambulance was called, and the 15-year-old was strapped to a gurney, taken to a psychiatric hospital, and monitored for safety before being released. Days after being hospitalized, Kelly was brought to my office by her parents who wanted to get help for their troubled girl.

Kelly's parents spoke first. They said that their daughter's hospitalization was the culmination of a yearlong downward spiral spurred by her phone obsession. Kelly had been refusing to spend time with her family or focus on school. Instead, she favored living her life on social media. A

previously happy girl and strong student, Kelly had grown angry, sullen, and was now bringing home report cards with sinking grades. Kelly's parents had tried many times in prior months to set limits on their daughter's phone use, but she had become increasingly defiant and deceitful, even sneaking on her phone at all hours of the night.

When Kelly's latest report card revealed a number of failing grades, her parents felt compelled to act. They told Kelly early in the afternoon on the day the police were called that she would need to turn in her phone by 9 p.m. But when the time came, Kelly refused, and a pushing match ensued between her and her parents, concluding in the violent tantrum that led the girl to be hospitalized.

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**Kelly's mom couldn't help feeling that they'd failed their daughter.**

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I asked Kelly, who was sitting in a corner, to help me understand her perspective on that evening. She didn't respond and instead glared at her parents. But then, surprising everyone in the room, she cried, "They took my f\*\*\*ing phone!" Attempting to engage Kelly in conversation, I asked her what she liked about her phone and social media. "They make me happy," she replied.

## **The Undoing of Families**

As Kelly and her family continued their appointments with me in the coming months, two concerns dominated our meetings. The first was that Kelly's unhealthy attachment to her phone continued, causing almost constant tension at home. The second concern emerged during my meetings with Kelly's parents alone. Even though they were loving and involved parents, Kelly's mom couldn't help feeling that they'd failed their daughter and must have done something terribly wrong that led to her problems.

My practice as a child and adolescent psychologist is filled with families like Kelly's. These parents say their kids' extreme overuse of phones, video games, and social media is the most difficult parenting issue they face—and, in many cases, is tearing the family apart. Preteen and teen girls refuse to get off their phones, even though it's remarkably clear that the devices are making them miserable. I also see far too many boys

whose gaming obsessions lead them to forgo interest in school, extracurricular activities, and anything else productive. Some of these boys, as they reach their later teens, use their large bodies to terrorize parents who attempt to set gaming limits. A common thread running through many of these cases is parent guilt, as so many are certain they did something to put their kids on a destructive path.

What none of these parents understand is that their children's and teens' destructive obsession with technology is the predictable consequence of a virtually unrecognized merger between the tech industry and psychology. This alliance pairs the consumer tech industry's immense wealth with the most sophisticated psychological research, making it possible to develop social media, video games, and phones with drug-like power to seduce young users.

These parents have no idea that lurking behind their kids' screens and phones are a multitude of psychologists, neuroscientists, and social science experts who use their knowledge of psychological vulnerabilities to devise products that capture kids' attention for the sake of industry profit. What these parents and most of the world have yet to grasp is that psychology—a discipline that we associate with healing—is now being used as a weapon against children.

## **“Machines Designed to Change Humans”**

Nestled in an unremarkable building on the Stanford University campus in Palo Alto, California, is the Stanford Persuasive Technology Lab, founded in 1998. The lab's creator, Dr. B.J. Fogg, is a psychologist and the father of *persuasive technology*, a discipline in which digital machines and apps—including smartphones, social media, and video games—are configured to alter human thoughts and behaviors. As the lab's website boldly proclaims: “Machines designed to change humans.”

Fogg speaks openly of the ability to use smartphones and other digital devices to change our ideas and actions: “We can now create machines that can change what people think and what people do, and the machines can do that autonomously.” Called “the millionaire maker,” Fogg has groomed former students who have used his methods to develop technologies that now consume kids' lives. As he recently touted on his personal website, “My students often do groundbreaking projects, and they continue having impact in the real world after they leave Stanford... For example, Instagram has influenced the behavior of over 800 million people. The co-founder was a student of mine.”

Intriguingly, there are signs that Fogg is feeling the heat from recent scrutiny of the use of digital devices to alter behavior. His boast about Instagram, which was present on his website as late as January of 2018, has been removed. Fogg's website also has lately undergone a substantial makeover, as he now seems to go out of his way to suggest his work has benevolent aims, commenting, "I teach good people how behavior works so they can create products & services that benefit everyday people around the world." Likewise, the Stanford Persuasive Technology Lab website optimistically claims, "Persuasive technologies can bring about positive changes in many domains, including health, business, safety, and education. We also believe that new advances in technology can help promote world peace in 30 years."

While Fogg emphasizes persuasive design's sunny future, he is quite indifferent to the disturbing reality now: that hidden influence techniques are being used by the tech industry to hook and exploit users for profit. His enthusiastic vision also conveniently neglects to include how this generation of children and teens, with their highly malleable minds, is being manipulated and hurt by forces unseen.

## Weaponizing Persuasion

If you haven't heard of persuasive technology, that's no accident—tech corporations would prefer it to remain in the shadows, as most of us don't want to be controlled and have a special aversion to kids being manipulated for profit. Persuasive technology (also called *persuasive design*) works by deliberately creating digital environments that users feel fulfill their basic human drives—to be social or obtain goals—better than real-world alternatives. Kids spend countless hours in social media and video game environments in pursuit of likes, "friends," game points, and levels—because it's stimulating, they believe that this makes them happy and successful, and they find it easier than doing the difficult but developmentally important activities of childhood.

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**Should the fear of social rejection be used to compel kids to compulsively use social media?**

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While persuasion techniques work well on adults, they are particularly effective at influencing the still-maturing child and teen brain. "Video games, better than anything else in our culture, deliver rewards to

people, especially teenage boys,” says Fogg. “Teenage boys are wired to seek competency. To master our world and get better at stuff. Video games, in dishing out rewards, can convey to people that their competency is growing, you can get better at something second by second.” And it’s persuasive design that’s helped convince this generation of boys they are gaining “competency” by spending countless hours on game sites, when the sad reality is they are locked away in their rooms gaming, ignoring school, and not developing the real-world competencies that colleges and employers demand.

Likewise, social media companies use persuasive design to prey on the age-appropriate desire for preteen and teen kids, especially girls, to be socially successful. This drive is built into our DNA, since real-world relational skills have fostered human evolution. The *Huffington Post* [article](#), “What Really Happens On a Teen Girl’s iPhone” describes the life of 14-year-old Casey from Millburn, New Jersey. With 580 friends on Instagram and 1,110 on Facebook, she’s preoccupied with the number of “likes” her Facebook profile picture receives compared with her peers. As she says, “If you don’t get 100 ‘likes,’ you make other people share it so you get 100.... Or else you just get upset. Everyone wants to get the most ‘likes.’ It’s like a popularity contest.”

Article author Bianca Bosker says that there are costs to Casey’s phone obsession, noting that the “girl’s phone, be it Facebook, Instagram or iMessage, is constantly pulling her away from her homework, sleep, or conversations with her family.” Casey says she wishes she could put her phone down. But she can’t. “I’ll wake up in the morning and go on Facebook just... because,” she says. “It’s not like I want to or I don’t. I just go on it. I’m, like, forced to. I don’t know why. I need to. Facebook takes up my whole life.”

## Important Questions Are Simply Not Asked

B.J. Fogg may not be a household name, but *Fortune Magazine* calls him a “New Guru You Should Know,” and his research is driving a worldwide legion of user experience (UX) designers who utilize and expand upon his models of persuasive design. As *Forbes Magazine* writer Anthony Wing Kosner [notes](#), “No one has perhaps been as influential on the current generation of user experience (UX) designers as Stanford researcher B.J. Fogg.”

UX designers come from many disciplines, including psychology as well

as brain and computer sciences. However, the core of some UX research is about using psychology to take advantage of our human vulnerabilities. That's particularly pernicious when the targets are children. As Fogg is quoted in Kosner's *Forbes* article, "Facebook, Twitter, Google, you name it, these companies have been using computers to influence our behavior." However, the driving force behind behavior change isn't computers. "The missing link isn't the technology, it's psychology," says Fogg.

UX researchers not only often follow Fogg's design model, but some may also share his apparent tendency to overlook the broader implications of persuasive design. They focus on the task at hand, building digital machines and apps that better demand users' attention, compel users to return again and again, and grow businesses' bottom line. Less considered can be how the world's children are affected by thousands of UX designers working simultaneously to pull them onto a multitude of digital devices and products at the expense of real life.

According to B.J. Fogg, the "Fogg Behavior Model" is a well-tested method to change behavior and, in its simplified form, involves three primary factors: motivation, ability, and triggers. Describing how his formula is effective at getting people to use a social network, the psychologist says in an academic paper that a key *motivator* is users' desire for "social acceptance," although he says an even more powerful motivator is the desire "to avoid being socially rejected." Regarding *ability*, Fogg suggests that digital products should be made so that users don't have to "think hard." Hence, social networks are designed for ease of use. Finally, Fogg says that potential users need to be *triggered* to use a site. This is accomplished by a myriad of digital tricks, including the sending of incessant notifications urging users to view friends' pictures, telling them they are missing out while not on the social network, or suggesting that they check—yet again—to see if anyone liked their post or photo.

Fogg's formula is the blueprint for building multibillion dollar social media and gaming companies. However, moral questions about the impact of turning persuasive techniques on children and teens are not being asked. For example, should the fear of social rejection be used to compel kids to compulsively use social media? Is it okay to lure kids away from school tasks that demand a strong mental effort so they can spend their lives on social networks or playing video games that don't make them think much at all? And is it okay to incessantly trigger kids to use revenue-producing digital products at the expense of engaging with family and other important real-life activities?

# Brain Hacking

Persuasive technologies work because of their apparent triggering of the release of dopamine, a powerful neurotransmitter involved in reward, attention, and addiction. In the Venice region of Los Angeles, now dubbed “Silicon Beach,” the startup Dopamine Labs boasts about its use of persuasive techniques to increase profits: “Connect your app to our Persuasive AI [Artificial Intelligence] and lift your engagement and revenue up to 30% by giving your users our perfect bursts of dopamine,” and “A burst of Dopamine doesn’t *just* feel good: it’s proven to re-wire user behavior and habits.”

Ramsay Brown, the founder of Dopamine Labs, says in a *KQED Science* article, “We have now developed a rigorous technology of the human mind, and that is both exciting and terrifying. We have the ability to twiddle some knobs in a machine learning dashboard we build, and around the world hundreds of thousands of people are going to quietly change their behavior in ways that, unbeknownst to them, feel second-nature but are really by design.” Programmers call this “brain hacking,” as it compels users to spend more time on sites even though they mistakenly believe it’s strictly due to their own conscious choices.

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**These design techniques provide tech corporations a window into kids’ hearts and minds.**

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Social networks and video games use the trusted brain-manipulation technique of variable reward (think slot machine). Users never know when they will get the next “like” or game reward, and it’s delivered at the perfect time to foster maximal stimulation and keep them on the site. Banks of computers employ AI to “learn” which of a countless number of persuasive design elements will keep users hooked. A *persuasion profile* of a particular user’s unique vulnerabilities is developed in real time and exploited to keep users on the site and make them return again and again for longer periods of time. This drives up profits for consumer internet companies whose revenue is based on how much their products are used.

Clandestine techniques that manipulate users to fulfill a profit motive are regarded by programmers as “dark design.” Why would firms resort to such tactics? As former tech executive Bill Davidow says in his *Atlantic*

article “Exploiting the Neuroscience of Internet Addiction,” “The leaders of Internet companies face an interesting, if also morally questionable, imperative: either they hijack neuroscience to gain market share and make large profits, or they let competitors do that and run away with the market.”

There are few industries as cutthroat and unregulated as Silicon Valley. Social media and video game companies believe they are compelled to use persuasive technology in the arms race for attention, profits, and survival. Children’s well-being is not part of the decision calculus.

## A Peek Behind the Curtain

While social media and video game companies have been surprisingly successful at hiding their use of persuasive design from the public, one breakthrough occurred in 2017 when Facebook documents were leaked to *The Australian*. The internal report crafted by Facebook executives showed the social network boasting to advertisers that by monitoring posts, interactions, and photos in real time, the network is able to track when teens feel “insecure,” “worthless,” “stressed,” “useless” and a “failure.” Why would the social network do this? The report also bragged about Facebook’s ability to micro-target ads down to “moments when young people need a confidence boost.”

Persuasive technology’s use of digital media to target children, deploying the weapon of psychological manipulation at just the right moment, is what makes it so powerful. These design techniques provide tech corporations a window into kids’ hearts and minds to measure their particular vulnerabilities, which can then be used to control their behavior as consumers. This isn’t some strange future... this is now. Facebook claimed the leaked report was misrepresented in the press. But when child advocates called on the social network to release it, the company refused to do so, preferring to keep the techniques it uses to influence kids shrouded in secrecy.

## Digital Pied Pipers

The official tech industry line is that persuasive technologies are used to make products more engaging and enjoyable. But the revelations of industry insiders can reveal darker motives. Video game developer John Hopson, who has a Ph.D. in behavioral and brain science, wrote the paper “Behavioral Game Design.” He describes the use of design features



to alter video game player behavior, sounding much like an experimenter running lab animals through their paces, answering questions such as: “How do we make players maintain a high, consistent rate of activity?” and “How to make players play forever.”

Revealing the hard science behind persuasive technology, Hopson says, “This is not to say that players are the same as rats, but that there are general rules of learning which apply equally to both.” After penning the paper, Hopson was hired by Microsoft, where he helped lead the development of the Xbox Live, Microsoft’s online gaming system. He also assisted in the development of Xbox games popular with kids, including those in the *Halo* series. The parents I work with simply have no idea about the immense amount of financial and psychological firepower aimed at their children to keep them playing video games “forever.”

Another persuasive technology expert is Bill Fulton, a game designer who trained in cognitive and quantitative psychology. He started Microsoft’s Games User-Research group before founding his own consulting agency. Fulton is transparent about the power of persuasive design and the intent of the gaming industry, disclosing in Big Four Accounting Firm PwC’s tech business journal: “If game designers are going to pull a person away from every other voluntary social activity or hobby or pastime, they’re going to have to engage that person at a very deep level in every possible way they can.”

This is a major effect of persuasive design today: building video games and social media products so compelling that they pull users away from the real world to spend their lives in for-profit domains. But to engage in a pursuit at the expense of important real-world activities is a core element of addiction. And there is increasing evidence that persuasive design has now become so potent that it is capable of contributing to video game and internet addictions—diagnoses that are officially recognized in China, South Korea, and Japan, and which are under consideration in the U.S.

Not only does persuasive design appear to drive kids’ addictions to devices, but knowledge of addiction is used to make persuasive design more effective at hijacking the mind. As Dopamine Labs’ Ramsay Brown acknowledges in an episode of CBS’s *60 Minutes*, “Since we’ve figured to some extent how these pieces of the brain that handle addiction are working, people have figured out how to juice them further and how to bake that information into apps.”

# Stealing from Childhood

The creation of digital products with drug-like effects that are able to “pull a person away” from engaging in real-life activities is the reason why persuasive technology is profoundly destructive. Today, persuasive design is likely distracting adults from driving safely, productive work, and engaging with their own children—all matters which need urgent attention. Still, because the child and adolescent brain is more easily controlled than the adult mind, the use of persuasive design is having a much more hurtful impact on kids.

Persuasive technologies are reshaping childhood, luring kids away from family and schoolwork to spend more and more of their lives sitting before screens and phones. According to a Kaiser Family Foundation [report](#), younger U.S. children now spend 5 ½ hours each day with entertainment technologies, including video games, social media, and online videos. Even more, the average teen now spends an incredible 8 hours each day playing with screens and phones. Productive uses of technology—where persuasive design is much less a factor—are almost an afterthought, as U.S. kids only spend 16 minutes each day using the computer at home for school.

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**Having children of their own can change tech execs’ perspective.**

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Quietly, using screens and phones for entertainment has become *the* dominant activity of childhood. Younger kids spend more time engaging with entertainment screens than they do in school, and teens spend even more time playing with screens and phones than they do sleeping. The result is apparent in restaurants, the car sitting next to you at the stoplight, and even many classrooms: Attesting to the success of persuasive technology, kids are so taken with their phones and other devices that they have turned their backs to the world around them. Hiding in bedrooms on devices, or consumed by their phones in the presence of family, many children are missing out on real-life engagement with family and school—the two [cornerstones](#) of childhood that lead them to grow up happy and successful. Even during the few moments kids have away from their devices, they are often preoccupied with one thought: getting back on them.

In addition to the displacement of healthy childhood activities, persuasive technologies are pulling kids into often toxic digital environments. A too frequent experience for many is being cyberbullied, which increases their risk of skipping school and considering suicide. And there is growing recognition of the negative impact of FOMO, or the fear of missing out, as kids spend their social media lives watching a parade of peers who look to be having a great time without them, feeding their feelings of loneliness and being less than.

## A Wired Generation Falling Apart

The combined effects of the displacement of vital childhood activities and exposure to unhealthy online environments is wrecking a generation. In her recent *Atlantic* article, “Have Smartphones Destroyed a Generation?,” Dr. Jean Twenge, a professor of psychology at San Diego State University, describes how long hours spent on smartphones and social media are driving teen girls in the U.S. to experience high rates of depression and suicidal behaviors.

And as the typical age when kids get their first smartphone has fallen to 10, it’s no surprise to see serious psychiatric problems—once the domain of teens—now enveloping young kids. Self-inflicted injuries, such as cutting, that are serious enough to require treatment in an emergency room, have increased dramatically in 10- to 14-year-old girls, up 19% per year since 2009.

While girls are pulled onto smartphones and social media, boys are more likely to be seduced into the world of video gaming, often at the expense of a focus on school. High amounts of gaming are linked to lower grades, so with boys gaming more than girls, it’s no surprise to see this generation of boys struggling to make it to college: a full 57% of college admissions are granted to young women compared with only 43% to young men. And, as boys transition to manhood, they can’t shake their gaming habits. Economists working with the National Bureau of Economic Research recently demonstrated how many young U.S. men are choosing to play video games rather than join the workforce.

As a child and adolescent psychologist myself, the inevitable conclusion is both embarrassing and heartbreaking. The destructive forces of psychology deployed by the tech industry are making a greater impact on kids than the positive uses of psychology by mental health providers and child advocates. Put plainly, the science of psychology is hurting kids more than helping them.

# The Awakening

Hope for this wired generation has seemed dim until recently, when a surprising group has come forward to criticize the tech industry's use of psychological manipulation: tech executives. Tristan Harris, formerly a design ethicist at Google, has led the way by unmasking the industry's use of persuasive design. Interviewed in *The Economist's 1843* magazine, he says, "The job of these companies is to hook people, and they do that by hijacking our psychological vulnerabilities."

Another tech exec raising red flags about his tech industry's use of mind manipulation is former Facebook president Sean Parker. Interviewed in *Axios*, he discloses: "The thought process that went into building these applications, Facebook being the first of them... was all about: 'How do we consume as much of your time and conscious attention as possible?'" He also said that Facebook exploits "vulnerability in human psychology" and remarked, "God only knows what it's doing to our children's brains."

A theme advanced by these tech execs is that the industry is unfairly using persuasive technology to gain a profit advantage. "Consumer internet businesses are about exploiting psychology," Chamath Palihapitiya, a former Facebook VP says in a talk ironically given at B.J. Fogg's Stanford University. "We want to psychologically figure out how to manipulate you as fast as possible and then give you back that dopamine hit."

Having children of their own can change tech execs' perspective. Tony Fadell, formerly at Apple, is considered the father of the iPad and also of much of the iPhone. He is also the founder and current CEO of Nest. "A lot of the designers and coders who were in their 20s when we were creating these things didn't have kids. Now they have kids," Fadell remarks, while speaking at the Design Museum in London. "And they see what's going on, and they say, 'Wait a second.' And they start to rethink their design decisions."

Marc Benioff, CEO of the cloud computing company Salesforce, is one of the voices calling for the regulation of social media companies because of their potential to addict children. He says that just as the cigarette industry has been regulated, so too should social media companies. "I think that, for sure, technology has addictive qualities that we have to address, and that product designers are working to make those products more addictive, and we need to rein that back as much as possible," Benioff told CNBC in January, 2018, while in Davos, Switzerland, site of the World Economic Forum.

Benioff says that parents should do their part to limit their kids' devices, yet expressed, "If there's an unfair advantage or things that are out there that are not understood by parents, then the government's got to come forward and illuminate that." Since millions of parents, for example the parents of my patient Kelly, have absolutely no idea that devices are used to hijack their children's minds and lives, regulation of such practices is the right thing to do.

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**Parents simply can't protect their children or teens from something that's concealed and unknown to them.**

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Another improbable group to speak out on behalf of children is tech investors. Major Apple stockholders—the hedge fund Jana Partners and California State Teachers' Retirement System, which collectively own \$2 billion in the firm's stock—have recently raised concerns that persuasive design is contributing to kids' suffering. In an [open letter](#) to Apple, the investors, teaming up with leading child technology experts, detailed evidence that kids' overuse of phones and devices is leading to their increased risk of depression and suicide risk factors. Specifically calling out the destructive impact of persuasive technology, the letter reads: "It is also no secret that social media sites and applications for which the iPhone and iPad are a primary gateway are usually designed to be as addictive and time-consuming as possible."

## Going Lower

How has the consumer tech industry responded to these calls for change? By going even lower. Facebook recently launched Messenger Kids, a social media app that will reach kids as young as five years old. Suggestive that harmful persuasive design is now honing in on very young children is the [declaration](#) of Messenger Kids Art Director, Shiu Pei Luu, "We want to help foster communication [on Facebook] and make that the most exciting thing you want to be doing."

Facebook's narrow-minded vision of childhood is reflective of how out of touch the social network and other consumer tech companies are with the needs of an increasingly troubled generation. The most "exciting thing" for young children should be spending time with family, playing

outside, engaging in creative play, and other vital developmental experiences—not being drawn into the social media vortex on phones or tablets. Moreover, Facebook Messenger Kids is giving an early start to the wired life on social media that we know poses risks of depression and suicide-related behavior for older children.

In response to the release of Facebook’s Messenger Kids, the Campaign for a Commercial-Free Childhood (CCFC) sent Facebook a [letter](#) signed by numerous health advocates calling on the company to pull the plug on the app. Facebook has yet to respond to the letter and instead continues to aggressively market Messenger Kids for young children.

## The Silence of a Profession

While tech execs and investors are speaking out against the tech industry’s psychological manipulation of children, the American Psychological Association (APA)—which is tasked with protecting children and families from harmful psychological practices—has been essentially silent on the matter. This is not suggestive of malice; instead, the APA leadership—much like parents—is likely unaware of the tech industry’s distorted use of psychology. Nonetheless, there is irony, as psychologists and their powerful tools are guided by ethics, while tech execs and investors are not.

The [Ethics Code](#) of the APA, U.S psychology’s chief professional organization, is quite clear: “Psychologists strive to benefit those with whom they work and take care to do no harm.” Moreover, APA Ethical Standards require the profession to make efforts to correct the “misuse” of the work of psychologists, which would include the application of B.J. Fogg’s persuasive technologies to influence children against their best interests. The code even provides special protection to kids because their developmental “vulnerabilities impair autonomous decision making.”

Manipulating children for profit without their own or parents’ consent, and driving kids to spend more time on devices that contribute to emotional and academic problems is the embodiment of unethical psychological practice. Silicon Valley corporations and the investment firms that support them are heavily populated by highly privileged white men who use concealed mind-bending techniques to control the lives of defenseless kids. Addressing this inequity is Tristan Harris, who [says](#), “Never before in history have basically 50 mostly men, mostly 20–35, mostly white engineer designer types within 50 miles of where we are right now [Silicon Valley], had control of what a billion people think and

do.” Harris was recounting an excerpt of a presentation he made while at Google during an interview with journalist Kara Swisher for *Recode Decode* in February of 2017.

Some may argue that it’s the parents’ responsibility to protect their children from tech industry deception. However, parents have no idea of the powerful forces aligned against them, nor do they know how technologies are developed with drug-like effects to capture kids’ minds. Parents simply can’t protect their children or teens from something that’s concealed and unknown to them.

Others will claim that nothing should be done because the intention behind persuasive design is to build better products, not manipulate kids. In fact, for those working in the user experience and persuasion fields, I’m sure there is no intent to harm children. The negative consequences of persuasive technology have been for the most part accidental, an unfortunate byproduct of an exceptionally competitive design process. However, similar circumstances exist in the cigarette industry, as tobacco companies have as their intention profiting from the sale of their product, not hurting children. Nonetheless, because cigarettes and persuasive design predictably harm children, actions should be taken to protect kids from their effects.

## **A Conscience in an Age of Machines**

Since its inception, the field of persuasive technology has operated in a moral vacuum. The resulting tragedy is not surprising.

In truth, the harmful potential of using persuasive design has long been recognized. Fogg, himself, says in a 1999 journal article, “Persuasive computers can also be used for destructive purposes; the dark side of changing attitudes and behaviors leads toward manipulation and coercion.” And in a 1998 academic paper, Fogg describes what should happen if things go wrong, saying, if persuasive technologies are “deemed harmful or questionable in some regard, a researcher should then either take social action or advocate that others do so.”

More recently, Fogg has actually acknowledged the ill effects of persuasive design. Interviewed by Ian Leslie in 2016 for *The Economist’s 1843 Magazine*, Fogg says, “I look at some of my former students and I wonder if they’re really trying to make the world better, or just make money.” And in 2017 when Fogg was interviewed by *032c Magazine*, he acknowledged, “You look around the restaurants and pretty much

everyone has their phone on the table and they're just being constantly drawn away from the live face-to-face interaction—I do think that's a bad thing." Nonetheless, Fogg hasn't taken meaningful action to help those hurt by the field he fathered. Nor have those in positions of power, with the recent exception of tech execs coming forward, done anything to limit the manipulative and coercive use of digital machines against children and teens.

So, how can children be protected from the tech industry's use of persuasive design? I suggest turning to President John F. Kennedy's prescient guidance: He said that technology "has no conscience of its own. Whether it will become a force for good or ill depends on man." I believe that the psychology profession, with its understanding of the mind and ethics code as guidance, can step forward to become a conscience guiding how tech corporations interact with children and teens.

The APA should begin by demanding that the tech industry's behavioral manipulation techniques be brought out of the shadows and exposed to the light of public awareness. Changes should be made in the APA's Ethics Code to specifically prevent psychologists from manipulating children using digital machines, especially if such influence is known to pose risks to their well-being. Moreover, the APA should follow its Ethical Standards by making strong efforts to correct the misuse of psychological persuasion by the tech industry and by user experience designers outside the field of psychology.

There is more the psychology profession can and should do to protect children and rectify the harm being done to kids. It should join with tech executives who are demanding that persuasive design in kids' tech products be regulated. The APA also should make its powerful voice heard amongst the growing chorus calling out tech companies that intentionally exploit children's vulnerabilities. And the APA must make stronger and bolder efforts to educate parents, schools, and fellow child advocates about the harms of kids' overuse of digital devices.

With each passing day, new and more influential persuasive technologies are being deployed to better take advantage of children's and teens' inherent limitations. The psychology profession must insist in this new age that its tools be used to improve rather than hinder children's health and well-being. By making a strong statement against the exploitive use of persuasive design, the APA and the psychology profession can help provide the conscience needed to guide us in this age of dangerously powerful digital machines.



