AdTech and Kids: Behavioral Ads Need a Time-Out
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By Joseph Jerome and Ariel Fox Johnson
Summary

The many "free" online services that kids and families rely on come at the high price of privacy. For years, apps and services have been subsidized by their users' information, feeding an ad-supported model that tracks and profiles kids, manipulating them and microtargeting them and their families with ads and content that companies think are relevant. Big tech companies have convinced advertisers and marketers that the more targeted ads are, the better,¹ but this business model has underappreciated costs, especially for kids. It's underlying profitability also is questionable. In this paper, we examine the practice of behaviorally targeted advertising, the harms it poses for young people, and what policymakers and companies can do to improve the landscape.

Behaviorally targeted ads are now standard fare for online platforms, and they are big business. But the truth is, behaviorally targeted ads are bad for kids. First, kids do not want or understand targeted ads. The majority of kids and parents feel uncomfortable with their data being used for targeted advertising.² Children and teens cannot comprehend the full complexity of how their personal information is collected, analyzed, and used for commercial purposes.³ Second, young people are particularly vulnerable to manipulative marketing practices, and personally targeted advertisements exacerbate this problem. Third, we should question the utility of tracking, profiling, and commercially manipulating young people during their formative years, when their brains are malleable and we should be encouraging exploration and trying new things. Whatever questionable benefits may accrue for advertisers is not worth the damage behavioral ads cause to our privacy, our society, and even our democracy. Common Sense believes that children and teens should neither be tracked and profiled online nor subject to behavioral ads based on their personal information or online activity.⁴

Understanding behaviorally targeted ads

Online advertising has been called the "original sin" of the internet.⁵ From the birth of the first digital banner ad in 1994, online advertising has been the dominant business model for websites, mobile apps, and digital services. Problems emerged from the start. While early internet users were barraged by obnoxious pop-up ads, advertisers became obsessed with trying to understand how their online ads performed—who was seeing them and how users responded.⁶ Small text files known as cookies became the answer. These files, which initially were created as a way for websites to remember information about the same visitor over time, became a way to track and surveil online behavior at an unprecedented scale.

Over the past three decades, online advertising has become a complicated and confusing ecosystem. Initially, online advertising operated similarly to ads placed in magazines and newspapers: Relying on readership demographics or the contents of a paper, an advertiser would pay to place an advertisement for, for example, cruises in a travel section that every subscriber would see. Online, that cruise ad would be placed on a travel blog, cookware ads on a recipe site, or exercise equipment on a health app.

¹ Mahdawi, A. (Nov. 5, 2019). Targeted ads are one of the world's most destructive trends. Here's why. The Guardian.

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Advertisers became convinced that ever more targeted advertising, personalized to each user, would be more profitable. Today, online advertising has shifted away from the contextual model above to a more personalized model that collects huge quantities of data about an individual’s location, their device, internet searches, and even which social media posts a person is hovering their mouse over. Also collecting information are data brokers, who add data to profiles and data segments of third-party ads. This information collection is used to guess our hobbies and interests and infer religion, wealth, and marital status.

Thousands of companies are involved in what is known as adtech, or providing advertising technologies. This creates a complicated soup of acronyms: SSPs, DSPs, DMPs, and on and on. Data brokers and location aggregators also have gotten into this mix. Seemingly innocuous banner ads on websites are actually visible manifestations of a complex system that tracks individuals across websites and apps, devices, and the real world. Now, advertisers use data collected over time and from different places, online and off, to understand our behaviors and guess at what we may like next. These insights are then used to target us with ads that businesses think are relevant—teens and, often, younger children are caught up in this process. Often this targeting is completely automated and happens in milliseconds through a real-time bidding process that occurs as websites load.

**Defining adtech**

**What is contextual advertising?**
Contextual advertising relies on ads displaying based on a website’s content. Think: placing an ad for dishware on a recipe site, or an ad for running shoes on a running forum. There are more sophisticated types of contextual targeting that rely on categorizing or assigning keywords to specific online content.

**What is behavioral advertising?**
Behavioral advertising relies on web browsing behavior such as pages visited, searches performed, and links clicked to categorize and profile internet users. Mobile and brick-and-mortar information also can be added to this mix, creating a more detailed profile.

**What is programmatic advertising?**
Programmatic ad buying refers to the use of software to purchase digital advertising rather than relying on individual deals or human negotiations. Much of online advertising is done this way.

**What is real-time bidding?**
Real-time bidding involves the buying and selling of online ad impressions through real-time auctions run by ad exchanges that occur in the time it takes a webpage to load.

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7 Jerome, J. (Sept. 25, 2018). *Where are the data brokers?* Slate.
12 Criteo. (Nov. 1, 2018). *Targeting 101: Contextual vs. behavioral targeting*. © 2021 Common Sense Media. All rights reserved. Common Sense and other associated names and logos are trademarks of Common Sense Media, a 501(c)(3) nonprofit organization (FEIN: 41-2024986).
Behaviorally targeted ads harm kids

While advertisers insist on the value of targeted ads, pediatricians and child health experts continue to marshal evidence of the particular harms that targeted ads present for children. Kids get swept into this ecosystem due to gaps in the Children's Online Privacy Protect Act, a lack of protections for teens between the ages of 13 and 18, and ads targeting households that include children.

First, kids don't want behavioral ads. While advertisers promote the perceived benefits of “tailored advertising,” young people are not interested in the value proposition of behavioral ad targeting. They express negative attitudes about data collection and sharing, especially surreptitious collection, disliking when apps monitor or collect "private information about them." When they have actually been consulted about this, children express irritation that a game they are playing might watch them ("if they watched me when I was playing, then I don't like that"), and teens say companies should "stop selling our data, phone numbers, etc. to companies, for advertisements." In a survey by the Irish Data Protection Commission, kids called targeted ads "annoying," "unfair," and "an invasion of privacy." Kids do grasp that behavioral ads are different in degree than traditional advertising. As the Irish Data Protection Commission explained, kids recalled "unsettling experiences of being 'followed' by personalized ads on the internet, and one group of eight to nine year olds drew parallels between TV ads and online ads, saying that online ads 'are so scary because they are pointed at you directly and not at everyone like a TV ad.'" One respondent even said, "It feels like they're stalking you." These concerns echo research from Common Sense, which has found that over two-thirds of teens are worried that social networking sites use their data to allow advertisers to target them with ads.

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Second, kids are largely defenseless against advanced and personalized targeting techniques that they do not understand. Advertising and marketing in general have a powerful effect on children. Studies demonstrate that ads quickly affect kids’ desires and purchase requests, and parent-child conflicts can occur whenever parents or caretakers deny those requests precipitated by advertising. Pediatricians recognize that children are

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14 Network Advertising Initiative. (2020). Understanding online advertising: How does it benefit me?
17 Data Protection Commission. (Jan. 28, 2019). Know your rights and have your say! A consultation by the Data Protection Commission on the processing of children’s personal data and the rights of children as data subjects under the General Data Protection Regulation.
particularly vulnerable to commercial manipulation. Young children cannot distinguish commercial and noncommercial content, while most children younger than 8 years of age cannot identify ads or recognize the persuasive intent of commercial appeals. Many older children up to age 12 have trouble identifying and/or understanding the commercial intent of an advertisement. Even advertising professionals acknowledge that children are a vulnerable advertising target group.

Behavioral advertising and the data collecting and profiling that support it exacerbate this problematic situation. Marketers and data brokers can create dossiers of a young person’s interests, fine-tuning sales pitches to impressionable audiences who, as discussed above, may not even understand that they are seeing ads, especially in complex digital environments. Most children do not realize that ads can be customized to them. Kids do not grasp the scale of how ad networks work, and that different ads show up for different kids even in the same game. Researchers have concluded that children are not equipped to identify targeted ads that exploit their tracked activity data.

Targeted ads can expose aspects of teens' lives they would prefer to share on their own terms, and the consequences of being inadvertently outed and exposed can be worse for kids without legal autonomy.

Finally, behavioral profiling is particularly problematic for kids. This ad targeting and associated data collection and profiling occur at a unique time of development in kids' lives. Children's brains and identities are developing and forming. It is a time when society encourages children to explore new things and not worry about making mistakes. The constant profiling that accompanies behavioral ad targeting, and targeted ads themselves, do a disservice to kids by potentially labeling and limiting them. Kids' choices and their autonomy may be constrained and shaped by coercive techniques that only show them certain opportunities but not others—as with, for example, women being shown fewer prestigious job offers in search results—and by algorithmic profiling that builds in bias when determining whether to, say, admit students into educational programs. And kids can hold

25 Anonymous. (May 8–13, 2021). "They see you're a girl if you pick a pink robot with a skirt": How children conceptualize data processing and digital privacy risks. *CHI ’21: ACM CHI Conference on Human Factors in Computing Systems*; academics studying children's interactions with apps have found that "some thought everyone received the same ads," or perhaps the same ads but not at the exact same time, while some thought "certain ads would be shown for the same video at the same time, similar to TV ads."
27 Gibbs, S. (July 8, 2015). *Women less likely to be shown ads for high-paid jobs on Google, study shows*. The Guardian.
themselves back, too: When young people know all their activities are being monitored by surveillance technologies, they appear less likely to engage in critical thinking, political activity, or questioning of authority. Targeted ads can expose aspects of teens' lives they would prefer to share on their own terms, and the consequences of being inadvertently outed and exposed can be worse for kids without legal autonomy. A child may not appreciate ads for LGBTQ+ resources showing up on a shared device, but any ads that reflect sexual interests, drugs, and professional interests can affect kids' privacy. A pregnant teenager, for example, likely would prefer to break the news to her family in a way that does not include a targeted mailer.

Furthermore, industry groups insist that behavioral ads are more relevant and personalized, but this ignores the fact that this is often a one-way street. Kids aren't choosing the ads they want; companies are data-mining kids to figure out what to target them with. Often, what companies think kids want is inappropriate or even dangerous. Kids watching videos on YouTube have been subjected to inappropriate ads that include violence, sexual content, and politics. Kids may be profiled as gamers, impulsive purchasers, or anxious overshare—then unfairly targeted by ads that encourage more of these things. Facebook, for example, has categorized hundreds of thousands of kids as "interested in" gambling and alcohol. And Facebook also got into hot water when it was revealed that employees had told advertisers they could identify when teens and other young people were feeling "stressed," "defeated," "overwhelmed," "anxious," "nervous," "stupid," "silly," "useless," and "a failure." Kids who are anxious or have low self-esteem don't need to be shown more makeup tutorials, offered a coffee pick-me-up, or otherwise commercially manipulated.

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**Behaviorally targeted ads provide limited benefits to most companies**

It is a common expression in advertising circles that half the money spent on advertising is wasted, but no one knows which half. This is a serious concern in online advertising, where fraud to generate ad impressions, clicks, or conversions is rampant. Studies have suggested that $1 out of every $3 spent on online advertising goes to fake traffic and automated bots. The companies that make their money from talking about how effective targeted advertising is have routinely been found to be exaggerating their capabilities. Facebook admitted to inflating video viewship metrics, and Comscore, which measures online advertising, was charged with falsely...
reporting its revenue and misreporting customer numbers. This is on top of the adtech intermediaries that also take a cut from each ad transaction—Google and Facebook alone take up 60% of all online ad revenue. This "adtech tax" means that publishers end up receiving only 30 to 40 cents of every dollar spent to advertise on their sites.

A 2019 study by researchers at three U.S. universities found that ad publishers' revenues increased by only 4 percent when cookies were available compared to when cookies were disabled, meaning that using personal data to target ads increased revenue by an average of just $0.00008 per ad. A former digital advertising strategist for the New York Times has argued that behavioral advertising "has been completely overhyped in its value for publishers from the day it was first invented."

Industry groups constantly argue that privacy rules and any restriction on behavioral advertising will eliminate "ad-supported free" services without detailing what this means. This orthodoxy ensures that other models of supporting healthier digital content are afforded no opportunity to flourish; it also has made cash-strapped local media perpetually more dependent upon this business model, to its detriment.

### Changes are coming—and overdue—for adtech

Behaviorally targeted ads displaced contextual advertising, which could be poised to make a comeback because of new privacy regulations and the decision of companies like Apple and Mozilla to restrict tracking tools. Adtech companies often avoid discussing the value of contextual advertising compared to behavioral ads. Because contextual ads involve displaying ads based on a website's content or an app's target demographic, they do not rely on personal profiling and therefore do not require or justify intensive data collection and tracking as a means of getting "free" content.

After the EU's General Data Protection Regulation went into effect, the New York Times cut off advertising exchanges in Europe and kept growing ad revenue for itself. The paper's vice president of advertising data called privacy laws that reduce reliance on third-party ad targeting a "win-win-win" for publishers, advertisers, and, importantly, consumers. Similarly, the Washington Post committed to "[going] beyond cookie-based ad targeting and [matching] ads to people without being 'creepy.'" It is true that big publishers like the Times and the Post are better positioned to rely on their own internal data to understand viewer demographics, but smaller publishers' and services' reliance on adtech has created an experience that is neither user-friendly nor economically sustainable.

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36 Robertson, A. (Sept. 24, 2019). Comscore, the internet's traffic judge, settles fraud charges for $5 million.
37 News Media Alliance. (Nov. 16, 2020). Big Tech says publishers keep majority of ad revenue, but experience suggests otherwise.
41 Trimmer, K. (Feb. 22, 2019). Third-party data is a bad habit we need to kick. AdExchanger.
42 Moses, L. (March 7, 2019). The Washington Post is trying to go beyond cookie-based ad targeting and match ads to people without being 'creepy'. Business Insider.
Contextual advertising has been shown to be more cost effective than behaviorally targeted ads, and reducing reliance on adtech also can have benefits to internet users: After USA Today removed adtech software from its European websites, the site not only had less surreptitious tracking but it also loaded faster. USA Today's U.S. website is 5.5 megabytes in size and includes more than 800 ad-related requests for information involving 188 different domains. In contrast, the EU-facing site is less than half a megabyte in size and contains no third-party tracking.

The justifications for behavioral ad tracking are growing increasingly thin. And privacy worries are forcing massive changes in the entire online advertising ecosystem. Apple has made headlines by announcing that updates to iOS will require companies to ask permission before they track iPhone users. At the same time, Google has switched on a new technology in its Chrome browser known as Federated Learning of Cohorts, or FLoC, which actually has nothing to do with federated learning but instead hides individual browsing activity "in the crowd" of similar cohorts. FLoC is no panacea, and some have argued that it could raise more privacy problems than it solves. It is conceivable that children themselves could be lumped together into their own FLoC cohort. Still, the message is growing even from within the industry itself that adtech has to change.

Against this backdrop, lawmakers are finally beginning to propose outright bans on behaviorally targeted ads and to question whether third-party trackers are malware. Laws like the California Privacy Rights Act promise to legally enshrine technical measures like the Global Privacy Control; tools like the Global Privacy Control let individuals easily exercise their privacy rights with multiple companies at once by turning off targeted advertising and data sharing through a universal technical signal.

Efforts to curb behavioral advertising to kids have international support. For example, Ireland has proposed that "organisations should, in general, avoid profiling children for marketing purposes, due to their particular vulnerability and susceptibility to behavioural advertising." Ireland, like the U.K., asks companies to prioritize the best interests of the child, and the Irish Data Protection Commission flatly stated that it does not consider behavioral ads or auto-suggestions based on profiling to be in the best interests of children. Limiting behavioral ad targeting and tracking also is consistent with the U.N. Convention on the Rights of the Child General Comment No. 25, which notes that behavioral marketing and profiling are "becoming routine" and that "[s]uch practices may lead to arbitrary or unlawful interference with children's right to privacy; they may have adverse consequences on children, which can continue to affect them at later stages of their lives."

43 GumGum (Sept. 6, 2020). Understanding contextual relevance and efficiency.
44 Jerome, J. (April 1, 2019). The GDPR's impact on innovation should not be overstated. Center for Democracy and Technology.
45 Levy, D. Speaking up for small business. Facebook.
49 U.S. Senate Committee on the Judiciary hearing (April 21, 2021). Antitrust applied: Examining competition in app stores; in questions directed to a Google representative, Senator Jon Ossoff (D-Ga.) suggested that mobile apps were reliant on software development kits, or SDKs, that were effectively malware. SDKs are tools that app developers can use to quickly include all sorts of functionality in apps without having to code things themselves, but because SDKs are operated by third parties, they can be a prime source of data leakage or otherwise aggressively exfiltrate user’s information from an app.
Recommendations for future policy

Targeted ads and the privacy-invasive behaviors that flow from this type of marketing may be more trouble than they’re worth, particularly when kids are the target audience. Common Sense believes that lawmakers and industry experts can work together to reduce and ultimately eliminate targeted ads directed at children. Self-restraint and regulation are ultimately necessary.

- We recommend that Congress prohibit the behavioral tracking and targeting of kids. Privacy legislation should flat-out prohibit behaviorally targeted ads for kids under 13, and ideally for any person a digital service believes to be under 18. At the very least, the default should be that behavioral ad targeting is off for teens and their informed permission is required to opt in to targeted advertising. State laws like the California Privacy Rights Act and international frameworks already are moving in this direction.

- We recommend that the Federal Trade Commission provide more guidance and, importantly, undertake more enforcement activities targeting online advertising. It can update, codify, and enforce advertising guidelines including those regarding endorsements and disclosures, and incorporate any learnings about how targeted ads can unfairly discriminate when it comes to children and teens and undermine the Children’s Online Privacy Protection Act through its ongoing 6(b) study into tech companies and social media platforms. It should put out guidance regarding behavioral ads and where their use is unfair to children and teens, including, if necessary, by commencing a rulemaking.

- We recommend that companies be honest about when they have kids on their services and use first- and third-party technologies that respect the best interests of children and teens. Companies should be proactive about thinking about when kids could be engaging with their products and services and not incorporate privacy-invasive third-party trackers into children’s apps.

Conclusion

Behavioral ads provide questionable financial benefits to businesses, and they harm impressionable kids. Young people do not want them and are defenseless against advanced targeting and profiling. Now is the time for companies, and policymakers, to advance advertising business models that better serve kids and families.

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52 Fair, L. (Dec. 4, 2020). FTC issues 6(b) orders to social media and video streaming services