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Our Screenless Future Calls For Augmented Parenting

How will parents manage their children's screen time when there are no screens?



By Anya Kamenetz [Long Read](#)

I'm delivering a six-foot-tall Elmo a roundhouse kick in the guts. His stomach slices into angular shards as my foot intersects with it. Next, I step over to his friend Grover . . . closer . . . closer . . . and finally place my head directly inside his looming, black, black, black void of a mouth.

This bizarre scenario was no dream. It happened on a visit to the Stanford University Virtual Human Interaction Lab, founded and directed by Jeremy Bailenson. I went there, as unlikely as it may seem, for parenting advice. I wanted to think about the future of screen time.

If the forecasters are to be believed, we'll all soon be plunged into a gently glowing alphabet soup of AR, VR, AI, MR, and IoT—augmented reality, virtual reality, artificial intelligence, “mixed reality,” and the Internet of Things. We'll be inhabiting the bodies of avatars 24/7, exchanging GIFs with our sentient refrigerators, and using virtual assistants to ward off telemarketing bots. Digital experiences will be so immersive and pervasive that Yellowstone

National Park will look like today's Times Square. By then, the existence of screens as separate entities, with borders and off buttons, will be a quaint, half-remembered state of affairs.

The current scientific advice on digital media for children is based on the concept of "screen time." This exists in opposition to a concept of "screenless time." "Online" imagines that there is such a thing as "offline." Those are exactly the boundaries that may melt with the next generation of technology.

If a 4-year-old child is accompanied through her day by an AR, AI Elmo—an imaginary friend made visible—is this screen time? What about a 9-year-old who plays outside with peace of mind supplied by a virtual tether, an alarm that sounds on his mother's phone when he leaves his block?

Being aware of the content our kids are encountering is going to be as important as ever. It might actually become easier as more applications move back into shared physical space. And this new media world offers vast new expressive and creative capabilities. The imaginations of tomorrow's great artists and designers are awakening in children today. As parents, encouraging their media pursuits will remain important.

Nevertheless, the dawn of VR is occasioning some soul searching. Just as 19th-century audiences supposedly panicked at the sight of the Lumiere brothers' 1895 film of a train pulling into a station, our 21st-century perceptual systems are still somewhat naive to the effects of 3D immersion. In my tour group at the Stanford lab, I saw the VR headset make full-grown adults nauseous, cause them to scream in fear, and refuse to take a step across a solid floor because their eyes told them they were at the edge of a cliff.



[Photo: Flickr user [Mario Antonio Pena Zapatería](#)]

“The brain has not evolved to distinguish a compelling virtual experience from a physical experience,” Stanford’s Bailenson has said. Given that, I would be a little concerned if first-person shooter games came to dominate the medium. Bailenson believes that we should take the power of VR experiences seriously from a moral perspective, and use it to produce what he calls transformative “a-ha” moments. He has built a VR game, for example, in which you fly around a city, Superman-style, in order to deliver insulin to a diabetic child.

Just as with earlier types of media, there’s a worry that children will be oversensitive to the effects. The fact that they seem to find the tech so compelling only makes the concern greater.

“[In experiments] we discovered that kids under 3 won’t put on the headset,” says Ken Perlin at NYU’s Future Reality Lab. Preschoolers found it too strange, dark, heavy, and uncomfortable. But, he says, “those from 4 onward love it. By the age of 8 or 9, the phrase that comes to mind is crack cocaine. They go nuts. They feel so completely at home. They come up with their own activities the moment they put the thing on. At a conference recently someone said, ‘Maybe this stuff isn’t safe for under-13 year olds.’ I said, ‘Maybe it’s only suitable for under-13 year olds.’”

I pushed back. Crack cocaine is not something we think of as beneficial for children. But Perlin sees these technologies as a kind of fantastical dojo for the imagination: a place to build mental strength and flexibility by testing out possible and impossible worlds.

He makes the case by invoking our evolutionary destiny. “Our minds are protean. They’re a general-purpose mechanism for working through many possible realities. Human minds evolve to deal with whatever might show up by making this general-purpose coping mechanism.” And, Perlin argues, doing that feels really good.

“This is potentially a powerful way of experiencing what we know our minds are capable of.” So he amends his statement; virtual realities are a food for the mind, not a drug. And extra-flexible young minds especially relish this food.

So if we’re not all going to be inhabiting a virtual universe 24/7, what then is the real future of VR? Perlin likes to say, “The holodeck is other people.” (The holodeck is the fictional VR environment available to characters in Star Trek to do things like train for sports and play games.) The experiences he and his lab are creating generally allow two or more people to interact, whether they’re physically standing in the same room or separated by thousands of miles. A lot of the ones they’ve built so far actually resemble stations in a Montessori classroom: allowing people to collaborate on a giant 3-D painting, or jam on imaginary musical instruments, or manipulate four-dimensional geometric shapes, or operate giant “puppets,” or play catch 5,000 miles apart.

Marching in an imaginary Day of the Dead parade alongside my kid sounds like more fun than plunking her down in front of a cartoon. If Perlin is right, multi-person VR and MR experiences branching off from the Wii and Kinect video games of today may feel more connected than bounded screens, because they move play back into a shared physical space. There’s another reason to give our kids headsets, Perlin argues: “The Hitchcock and Spielberg of VR haven’t been born yet.” It could be your baby!

“Hi, what’s your name? I’m Alex.”

Alex is a gender-ambiguous 8-year-old in a polo shirt, with medium-dark skin and hair styled in chin-length twists. In a classroom at a charter school in Pittsburgh, other third graders sit down opposite Alex to do a science activity. Together, they have to discuss a picture of a dinosaur and figure out as much as they can about it.

Alex doesn’t always seem to catch everything the other person is saying, and sometimes offers inappropriate generic responses like, “Me, too.” But the illusion of a conversation is pretty good, considering Alex is an artificially intelligent avatar created at Carnegie Mellon University.

In some ways, the parenting challenges of VR are easier to conceptualize because they still exist within the frame of “media” — environments and narratives designed and engineered by other human minds that you switch on and off, enter and leave, and that you understand as not being “real.”

Artificial intelligence is more complex and harder to resist. Kids seem to love interacting with the first generation of voice-activated AI “assistants” like Amazon’s Alexa and the iPhone’s Siri. AI is starting to blur the line between interacting with a computer program and with a person.

Justine Cassell, an associate dean in the school of Computer Science at Carnegie Mellon, makes technologies that engage people socially and emotionally. She’s interested in the transactive nature of intelligence—the idea that intelligent behavior arises in dialogue, in communication, not solely inside one person’s head. Over the past 20 years, she has built “listener” programs that encourage children to tell stories. Some are aimed at those on the autism spectrum, others at English language learners. Children get to create the characters that they imagine listening to them: one basketball fan chose Shaquille O’Neal. Interacting with these programs has been shown to build children’s confidence and sophistication in using language, in ways that transfer to conversations with humans. “In some ways computers are the ideal listener if they’re designed well,” Cassell argues. “They’re never late for work. They are infinitely available, infinitely patient.”



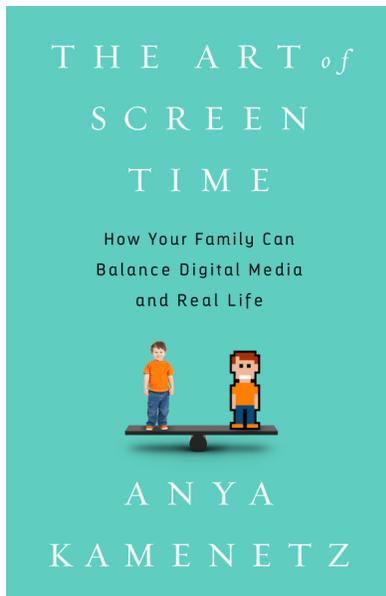
The idea of a “lifelong learning companion” was first introduced by early AI researchers decades ago. The digital “Young Lady’s Illustrated Primer” in [Neal Stephenson’s 2003 book, *The Diamond Age*](#), is a great instantiation of it from sci-fi. Think about it: We already have access to the world’s knowledge in our pockets, and it hasn’t led to a demonstrable increase in smartness (in know-it-alls, maybe). But like a wise imaginary friend, learning companions could engage children socially as well as intellectually — asking questions, providing timely encouragement, offering suggestions and connections to resources, helping you talk through difficulties. Over time, the companion would “learn” more and more about what a child knows, what her interests are, and reflect a version of herself back to herself, like a great teacher.

Alex, a research project directed by Cassell’s PhD student Samantha Finkelstein, is an early step down that path. Finkelstein and Cassell were specifically curious about the phenomenon called code switching. When English-language learners and other children of non-dominant class and ethnic backgrounds get to school, they encounter what might be considered a foreign dialect: Standard English. Code switching is the term for the agility necessary to employ the right style of language in the right context.

Finkelstein and Cassell set up an experiment around the dinosaur activity at a 99% black charter school in Pittsburgh. In one condition, Alex spoke Standard English the whole time. In the other, Alex spoke the children’s dialect during the initial getting-to-know-you, brainstorming session. “I think we need to figure out, how do the creature, like, eat and move around and stuff,” Alex says, or “You think those spikes sharp enough to hunt the bunny?”

Then, when it’s time to present, Alex says something like, “My teacher always like it when I use my school grammar when I gotta do presentations like this.” And proceeds to speak in Standard English.

In the code-switching condition, the children showed better verbal science reasoning, with more hypotheses supported by observations. On the other hand, Finkelstein told me, when Alex stuck to Standard English the whole time, the kids at times became pretty hostile. They baited the program with comments like, “Not bad for a stupid black kid like you,” or even, “What kind of porn do you watch?” She thinks maybe the students were reacting to a sense of inauthenticity that came from creating a child character who looks like them but speaks like a dominant-culture adult. I know what she means. I experienced my own impulse to try and puncture the illusion when confronted in VR with the placid figures of Elmo and Grover.



This article is adapted from the book [The Art of Screen Time](#) by Anya Kamenetz.

Sitting down with Alex makes clear that the idea of a universal lifelong learning companion is still several years away. On the other hand, the way that kids interacted with Alex, in the videos of the experiment I watched, seemed amazingly, for lack of a better word, natural. The kids were clear that it wasn't a real person—Cassell says when you ask them about it, they just roll their eyes—but they were willing to play along anyway. And the experimental results showed that they get very real senses of either social validation or social threat from Alex, depending on how it talks.

If it seems bizarre or alienating to think about our children having feelings toward a computer program, we have some clear precursors. One is the “superpeer” or “parasocial” relationships children have with their favorite characters, whether superheroes, princesses, or Muppets. Another is the transitional object. That's the developmental expert Donald Winnicott's term for the teddy bear, blanket, or other lovey that most healthy children take up in infancy and may find comfort in throughout childhood. The cuddles help them transition between the early ever presence of a parent and a gradually internalized sense of security.

Those stuffed creatures also occupy an imaginary space between animate and inanimate. As the Velveteen Rabbit, a forgotten toy, says in the haunting children's book of the same title, “When

a child loves you for a long, long time, not just to play with, but REALLY loves you, then you become Real.”

Cassell believes we actually carry that ability to transfer affection to objects into adulthood. “It doesn’t go away. I happen to think it lasts.”

In fact, that little beeping device you carry with you at all times might just be your lovey.

Even as the concept of “screen time” fades into the background, the parental work of mediation and joint engagement—using screens as a basis to connect, not just check out—will become more important. And to do it, parents need to understand the forces arrayed against us.

There’s a reason I started out this chapter with Elmo. In the 1960s, a cultural panic arose over the increasingly ubiquitous “vast wasteland” that was television.

“When television is good, nothing—not the theater, not the magazines or newspapers—nothing is better. But when television is bad, nothing is worse,” said FCC chairman Newton Minow in that famous 1961 speech.

It fell to the creators of children’s educational programming to spread the countermessage that TV could be a positive and uplifting medium deserving of public support. Fred Rogers of *Mr. Rogers’ Neighborhood* famously testified before the U.S. Senate Subcommittee on Communications on May 1, 1969, in defense of public television: “I give an expression of care every day to each child.”



Alex

Mr. Rogers was compelling. But Newton Minow was right. Most media is not *Mr. Rogers’ Neighborhood* (or its reboot, *Daniel Tiger*), because most of it is commercial, created with little

thought for the public interest. Rogers would probably agree, actually. “I got into television because I hated it so,” he told CNN in 2001.

Collaborations like the ones that *Sesame Street* is now pursuing with creators of both VR and AI technologies, or like the partnership between PBS Kids and the children’s programming language ScratchJr, bring the public mission of media into the 21st century.

But one thing that’s not new about new media is that it will continue to be dominated by corporate interests. Not that Hollywood, the TV industry, and Silicon Valley haven’t blessed us with great art, entertainment, connections, and edification. Still, parents have a lot of work to do if we are to advocate for media experiences for our children that stand for something more than simply profit. We could use more help from policymakers and from industry-connected voices, which are all too rare.

To say that these forces are powerful doesn’t absolve us of the responsibility to do what humans do, which is to actively make choices. Armed with images of the potential drawbacks of junk-food content, a vision of positive parenting, and evidence about our own power to mediate, parents with agency and resources to do so will be able to act more confidently.

Of course I worry about my children encountering the dangers and excesses of the virtual world, just as I do in the real world. But children have always shown humanity how to adapt. They can bring out our greatest love and concern, our most visceral empathy, even as they reawaken our curiosity and sense of wonder. These are precisely the superpowers we need to fight the robot army and construct a more humane digital world.