



Phone-based Childhood
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What is childhood—including adolescence—and how did it change when smartphones moved to the center of it? If we take a more holistic view of what childhood is and what young children, tweens, and teens need to do to mature into competent adults, the picture becomes much clearer. Smartphone-based life, it turns out, alters or interferes with a great number of developmental processes.

A child's brain is already 90 percent of its adult size by about age 6. The next 10 or 15 years are about learning norms and mastering skills—physical, analytical, creative, and social. As children and adolescents seek out experiences and practice a wide variety of behaviors, the synapses and neurons that are used frequently are retained while those that are used less often disappear. Neurons that fire together wire together, as brain researchers say.

For children of all ages, one of the most powerful drivers of learning is the strong motivation to play. Play is the work of childhood, and all young mammals have the same job: to wire up their brains by playing vigorously and often, practicing the moves and skills they'll need as adults. One crucial aspect of play is physical risk taking. Children and adolescents must take risks and fail—often—in environments in which failure is not very costly. This is how they extend their abilities, overcome their fears, learn to estimate risk, and learn to cooperate in order to take on larger challenges later.

Human childhood and adolescence evolved outdoors, in a physical world full of dangers and opportunities. Its central activities—play, exploration, and intense socializing—were largely unsupervised by adults, allowing children to make their own choices, resolve their own conflicts, and take care of one another. Shared adventures and shared adversity bound young people together into strong friendship clusters within which they mastered the social dynamics of small groups, which prepared them to master bigger challenges and larger groups later on.

The transition away from a more independent childhood was facilitated by steady improvements in digital technology, which made it easier and more inviting for young people to spend a lot more time at home, indoors, and alone in their rooms. Eventually, tech companies got access to children 24/7. They developed exciting virtual activities, engineered for “engagement,” that are nothing like the real-world experiences young brains evolved to expect.

Because the platforms did nothing (and still do nothing) to verify the stated age of new-account applicants, any 10-year-old could open multiple accounts without parental permission or knowledge, and many did. Facebook and later Instagram became places where many sixth and seventh graders were hanging out and socializing. If parents did find out about these accounts, it was too late. Nobody wanted their child to be isolated and alone, so parents rarely forced their children to shut down their accounts.

The numbers are hard to believe. The most recent Gallup data show that American teens spend about *five hours a day* just on social-media platforms (including watching videos on TikTok and YouTube). Add in all the other phone- and screen-based activities, and the number rises to somewhere between seven and nine hours a day, on average. The numbers are even higher in single-parent and low-income families, and among Black, Hispanic, and Native American families.

But perhaps the most devastating cost of the new phone-based childhood was the collapse of time spent interacting with other people face-to-face. A study of how Americans spend their time found that, before 2010, young people (ages 15 to 24) reported spending far more time with their friends (about two hours a day, on average, not counting time together at school) than did older people (who spent just 30 to 60 minutes with friends).

Time with friends began decreasing for young people in the 2000s, but the drop accelerated in the 2010s, while it barely changed for older people. By 2019, young people's time with friends had dropped to just 67 minutes a day. It turns out that Gen Z had been socially distancing for many years and had mostly completed the project by the time COVID-19 struck.

Real-world relationships and social interactions are characterized by four features—typical for hundreds of thousands of years—that online interactions either distort or erase.

First, real-world interactions are *embodied*, meaning that we use our hands and facial expressions to communicate, and we learn to respond to the body language of others. Virtual interactions, in contrast, mostly rely on language alone.

Second, real-world interactions are *synchronous*; they happen at the same time. As a result, we learn subtle cues about timing and conversational turn taking. Synchronous interactions make us feel closer to the other person because that's what getting "in sync" does. Texts, posts, and many other virtual interactions lack synchrony.

Third, real-world interactions primarily involve *one-to-one communication*, or sometimes one-to-several. But many virtual communications are broadcast to a potentially huge audience. Online, each person can engage in dozens of asynchronous interactions in parallel, which interferes with the depth achieved in all of them.

Finally, real-world interactions usually take place within *communities that have a high bar for entry and exit*, so people are strongly motivated to invest in relationships and repair rifts when they happen. But in many virtual networks, people can easily block others or quit when they are displeased. Relationships within such networks are usually more disposable.

The debate around adolescents' use of smartphones and social media typically revolves around mental health, and understandably so. But the harms that have resulted from transforming childhood so suddenly and heedlessly go far beyond mental health — social awkwardness, reduced self-confidence, and a more sedentary childhood. Here are three additional harms.

Fragmented Attention, Disrupted Learning

Staying on task while sitting at a computer is hard enough for an adult with a fully developed prefrontal cortex. It is far more difficult for adolescents in front of their laptop trying to do homework. They are probably less intrinsically motivated to stay on task. They're certainly less able, given their undeveloped prefrontal cortex, and hence it's easy for any company with an app to lure them away with an offer of social validation or entertainment.

Addiction and Social Withdrawal

The neural basis of behavioral addiction to social media or video games is not exactly the same as chemical addiction to cocaine or opioids. Nonetheless, they all involve abnormally heavy and sustained activation of dopamine neurons and reward pathways. Over time, the brain adapts to these high levels of dopamine; when the child is not engaged in digital activity, their brain doesn't have enough dopamine, and the child experiences withdrawal symptoms. These generally include anxiety, insomnia, and intense irritability. Kids with these kinds of behavioral addictions often become surly and aggressive, and withdraw from their families into their bedrooms and devices.

The Decay of Wisdom and the Loss of Meaning

During that crucial sensitive period for cultural learning, from roughly ages 9 through 15, we should be especially thoughtful about who is socializing our children for adulthood. Instead, that's when most kids get their first smartphone and sign themselves up (with or without parental permission) to consume rivers of content from random strangers. Much of that content is produced by other adolescents, in blocks of a few minutes or a few seconds.

The main reason why the phone-based childhood is so harmful is *because* it pushes aside everything else. Smartphones are experience blockers. Our ultimate goal should not be to remove screens entirely, nor should it be to return childhood to exactly the way it was in 1960. Rather, it should be to create a version of childhood and adolescence that keeps young people anchored in the real world while flourishing in the digital age.

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