

Missing the Big Picture

Studies of TV's Effects Should Consider How HDTV is Different

The history of the technology of television has been a continuous evolution toward ever more intense stimulation. The amount of data coming into the eyes, ears, and brain while we watch TV has been constantly escalating. In the early years, viewers gathered in the living room to watch a tiny black-and-white screen, sometimes enlarged by a distorting magnifying glass. Small though it was, it was still a large increase over the information that had been coming into the ears alone by way of radio. Radio required its audience to imagine what the Lone Ranger

might look like. Television eliminated that need. Viewers could now see what he “really” looked like. Or at least what he looked like in black and white; viewers still had to imagine what he and his sidekick Tonto, and the sunsets they rode into, would look like in color.

With each later technical advance, like the arrival of color and the advent of stereo sound, the levels of information and stimulation that television offered took another step up, and the need for imagination took another step down. But the last decade has seen giant leaps in the same direction, as millions of American families have welcomed

a new generation of equipment into their homes: Giant-screen flat-panel monitors capable of displaying high-definition (HD) images. Movie-screen dimensions, with an aspect ratio much wider than tall. High-amplification surround-sound audio.

The new television set is no longer a box in the corner that gets turned on and off. It is a fixture, dominating rooms with its physical presence and dominating family life with its visual and aural presence. In many aptly-named “home theaters,” families no longer merely watch television; they are immersed in it. And there is good reason to believe that the next few years will only bring further advances in the same direction. At the Consumer Electronics Show in Las Vegas in 2008, Panasonic unveiled a gigantic plasma HDTV screen, measuring fully twelve and a half feet across the diagonal. And now, hoping to capitalize on the 3D technology popularized by the blockbuster *Avatar*, consumer-electronics companies are readying televisions that will bring into the home not just HD, but HD in 3D.

Some critics have focused their ire on the increased energy that the advanced new televisions require, the chemicals that make possible their brilliant pictures, and the toxic e-waste from the millions of discarded old sets. Other critics have focused on the role that the U.S. government played in encouraging the adoption of the electronics industry’s latest models. In 2004, Michael Powell, then chairman of the Federal Communications Commission (FCC), began hawking HDTV at taxpayer

expense. “The FCC wants to be a partner in helping consumers understand what it will actually take once they bring home their beautiful new high-definition sets to really get it online,” Powell said in October 2004. A few days later, according to the *New York Times*, Powell “appeared on *Monday Night Football* on ABC to promote the virtues of digital television to the technology’s core audience: sports fans.” Is this appropriate behavior for the chairman of a regulatory commission? Or is it rather a confirmation of the phenomenon that William P. Ophuls, a former U.S. Foreign Service Officer and environmental writer, once described in another context: “History...shows that regulatory agencies tend to be captured by the interests they are supposed to be regulating, so that they rapidly turn into guardians of special instead of public interest.”

But for all the attention paid to the new televisions by both technology’s cheerleaders and skeptics, almost no one has asked the most important question: What psychological, emotional, social, and even neurological effects will these big-screen high-definition televisions have—especially on the development of children and adolescents?

As far back as the so-called “Golden Age” of TV in the 1950s, parents have been worrying about the potential harmful effects of televised violence on their children’s psyches. In response to that concern, social, behavioral, and cognitive scientists have for decades been churning out media-violence studies.

Despite the overwhelming consensus of those studies that viewing violent media increases childhood aggression, desensitization, and fear, television content remains remarkably violent: It is estimated that by the age of eighteen, the average American child will have witnessed 15,000 simulated murders.

At the request of three dozen members of Congress, the FCC in 2007 published a report on violent television and its impact on children. The commission said that it agreed with the views expressed by the Surgeon General that “on balance, research provides strong evidence that exposure to violence in the media can increase aggressive behavior in children, at least in the short run.” The commission also concluded that current measures are inadequate to protect children from exposure to “excessively violent programming.”

What is noteworthy in the FCC report, and in most of the studies of TV’s effects, is that television is considered to be an undifferentiated entity. The specific *form* in which violent content is delivered is ignored. But it stands to reason that the technology matters immensely. A young child watching a small screen from a distance is having a very different experience—psychically, neurologically, physiologically—from a young child lying on the floor a few feet away from a giant, surround-sounded, pulsing plasma screen. It is much more difficult to achieve critical distance from TV shows, movies, or video games when the size and intensity of the experience is so completely absorbing.

One of the rare investigations into the psychological and emotional effects of high-definition television was carried out in the early 1990s—a few years before the widespread adoption of today’s widescreen HDTV sets, but anticipating it—by Stanford’s Byron Reeves. Reeves contended that advanced television systems were not just the same old TV with better pictures and sound; they provided a whole new experience, creating in the viewer a sense of “being there.” In a presentation at a 1992 conference on the effects of TV on children’s brains, Reeves argued that the border between television and reality is blurring. “Our bodies and minds may respond to the images on the screen as if they were actual people, places, and events,” he said. “As television develops a look and style that further disguises the boundary between visual image and reality, we will be even more encouraged to ignore the technology that delivers the signals. Television may no longer come between us and reality. Television could become invisible.”

Based on his research, Reeves argued that it will become increasingly difficult for young children, their adolescent brothers and sisters, and their parents to distance themselves from the experience of television. “Big pictures,” said Reeves, “may turn up the volume on whatever emotional responses would have been experienced with a standard presentation.”

A few years later, Reeves and coauthor Clifford Nass elaborated on this theme in their book *The Media Equation*. Because our brains evolved in a world

with no such thing as modern media, they argued, we respond to television as if what is going on behind the screen is the real thing. (A similar argument is often made about the powerful draw of fast food. Because we evolved in a world of scarcity, we respond to the flavors of once-scarce but now hyper-abundant fat, sugar, and salt with behaviors that have made obesity a major health problem. Television and fast food are both “supernormal stimuli,” as Deirdre Barrett points out in her new book of that name—and HDTV is the new “supersize me” supernormal.) Most people assume that confusions between mediated experience and real life are rare, and therefore unimportant. But Reeves and Nass contend that what they call “the media equation”—*media equal real life*—“applies to everyone, it applies often, and it is highly consequential.”

Recent research seems to confirm Reeves’s earlier findings and speculations. In 2006, the journal *Media Psychology* devoted an entire issue to using the latest brain-imagining techniques to study the neurobiological effects of television violence, especially on children. The introduction to the issue notes that one team of researchers found much of what they expected—the brains of children watching television showed the sort of activity associated with “fight or flight” threat responses. There was also activity in the parts of the brain normally associated with imitation. But the researchers found something unexpected, too—activity in a neural area associated with posttraumatic stress disorder. This could mean:

that these young children were actively processing the video violence and storing the aggressive scripts in an area of the brain that... serves as a ‘ready file’ for memories that return in a flash... [and perhaps that] the child is more likely to behave more aggressively—and more swiftly—when provoked, because these scripts are readily available. A further finding that has broad implications for rethinking the effects of so-called entertainment violence is the fact that these children were viewing violence that they knew was fake or fantasy violence, and yet their brains did not distinguish between fantasy and real violence—the threat was clear.

Even taking into account the relative novelty and uncertainty of brain imagining as a technique for understanding the mind, this new neurological evidence joins the mountains of studies showing the potential harmful effects of violent media. And these studies should be understood in conjunction with research showing television’s addictive properties. As the psychologist Mihalyi Csikszentmihalyi and the media studies professor Robert Kubey wrote in *Scientific American* in 2002:

Psychologists and psychiatrists formally define substance dependence as a disorder characterized by criteria that include spending a great deal of time using the substance; using it more often than one intends; thinking about reducing use or making repeated

unsuccessful efforts to reduce use; giving up important social, family or occupational activities to use it; and reporting withdrawal symptoms when one stops using it. All these criteria can apply to people who watch a lot of television.

They might have added that the progression of the technology of television parallels the course of a drug addiction: the addict must keep upping the quantity or purity in order to get the desired effect.

What does it mean for our society that we watch so much television, and that television is becoming an ever more enveloping experience? What will happen to the developing brains of toddlers surrounded by supernormal stimuli that are cutely programmed to provoke the primitive “orienting response”? How

will a medium that makes few demands on imagination impact the future of imagination? How will it affect the ability to sustain attention to words that just sit there on a page, or to even perceive what’s not always grabbing at one’s eyes and ears? How does television transform the psyche, and how will our ability to make moral judgments be affected by spending so much of our lives mixing illusion and reality?

These are questions that demand much more intensive investigation from scientists and policymakers, and much more consideration from those of us celebrating the crystal clarity of our gleaming new television sets.

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