The Internet, Instant-Gratification, and Us:
How is the age of New Media changing the way we think?

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Abstract

The rapid proliferation of information technology, particularly in the first decade of the twenty-first century, undoubtedly changed the way that the world operates. Although many historical events have changed humans' worldview, this paper seeks to investigate the extent, trajectory, and contents of this shift. A literature review unearths numerous studies regarding the uniquely-modern vast selection of media available for consumption, and the resultant behavioral effects such as impulsivity, guilt, and unnatural stimuli adaptation. Additionally, studies of teenagers and young adults provide troubling evidence of the way that adaptation to new media is changing an entire generation.

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Introduction

Although countless human inventions have participated in shaping the world into the one that we live in today, most have not drastically reshaped the way that humans interact with one another and view the world at large. While these sometimes-substantial inventions (e.g. the nail, the crossbow, the eyeglass, atomic energy, etc.) spurred innovation and pushed progress forward, they did comparatively little to nudge humans' psychological viewpoint and social dynamics. Human history is littered with a trail of inventions, ideas, and discoveries that have caused the human psyche to sharply veer off its previously defined path.

Around 2.6 million years ago, before evolution had fully sculpted the species homo sapiens, human ancestors discovered how to use tools for things like hunting, allowing them to more easily capture prey (Sema, 2003). About a million years ago, ancient humans learned how to use fire to cook, to protect themselves from predators, and to otherwise bend nature to their will (James, 1989). The usage of tools and fire allowed ancient humans to gain a distinct advantage over both predator and prey, and this advantage undoubtedly changed the way that these humans thought, interacted, and lived. As time passes, these earth-shattering inventions occur with increasing frequency: the invention of the wheel in 3500BCE allowed humans to easily travel beyond the local village, removing the obstacle of walking from the pursuit of exploration (Anthony, 2007). The creation of writing in 3200BCE allowed information and ideas to be saved and transmitted at another time, and the development of movable type in 1088 allowed for a massive distribution of information and for the ability to easily save this widely-available information for future generations (Radner, 2011). When the newspaper was created in 1605, humans were exposed to arguably the first form of massively-distributed media, plunging our species into an asynchronous popular conversation about common events. Other types of media soon

followed, with the arrival of the audio-transmitting radio in 1906, cable television in 1925, electronic video games in the 1970s, all culminating with the creation of the Internet, in 1990.

The Transition to New Media

People growing up in the early twentieth century emerged into a landscape of reading newspapers and books, as well as occasionally hearing scheduled programs over the radio. The generation arriving thirty years later found entertainment in scheduled television programs and radio broadcasts. Those growing up a few decades after found themselves exposed to an even wider selection of media, which now included cable television and video games. Each generation grew up in a completely different universe, with vastly different lives, world-views, social dynamics, and experiences. Not only has the human psyche changed over the course of human history, it seems to never stop changing. As time flows forward, things change and evolve unceasingly. Human history demonstrates that certain discoveries and inventions have changed the capabilities of our species, the way in which we view the world, the ways that individuals interact, and the manifest world in which we live. The rate at which the world evolves is increasing to a dizzying pace while our species strives to adapt to the ever-transient conditions.

Just recently, the rate of technological innovation has escalated to the point where the world is not undergoing a total shift every generation; instead, constant technological development is causing the current generation to find themselves in a completely different world than those who grew up just five years after. People living in 1990 could not hope to conceptualize the overwhelming effect of the new media that emerged from the proliferation of the internet.

This new media (i.e. media emerging in the first decade of the twenty-first century) can be regarded with a sense of optimism, as there are obvious advantages to the newly interconnected world, as evidenced by the enthusiasm of governments and corporations to

quickly adopt the internet and related technologies. The internet allows for egalitarian marketplaces and shared pools of knowledge; new technologies have spawned tools that enhance creativity and boost productivity (Panek, 2012). However, this optimism should be tempered by a sense of uneasiness due to how little is known about the psychological, developmental, and neurological repercussions of new media's consumption.

Why New Media Is Unlike Anything That Came Before It

Although it is clear that new media changes the way individuals think and behave (just as most significant and world-changing inventions do), it is less clear how substantial these changes are. Some studies of the effects of new media refer to a newly-created term, *technostress*, defined as "a modern disease of adaptation caused by an inability to cope with the new computer technologies in a healthy manner" (Lee, 2014). Some researchers have already demonstrated that new media has a tendency to distract individuals with superficial pursuits, decrease a sense of well-being, compromise one's ability to concentrate and learn, hamper one's ability to form social bonds, and possibly lead to addiction (Wagner, 2009).

In contrast with twentieth century media (i.e. old media, e.g. cable television, radio broadcasts, newspapers, magazines, books, etc.), new media presents two discrete and pronounced differences: the increasing frequency of an individual's media consumption, and the increasing availability (both temporally and spatially) of mediated experiences (Panek, 2012). Although these changes may appear self-evident, there are subtleties brought along with the untried design of new media, as contrasted with old media. In the twentieth century, broadcast media (e.g. television and radio) came with implicit availability constraints, such as an imposed schedule and a non-portable environment (Panek, 2012). Anyone who wished to watch a specific television program was obliged to find out at which time said program would be shown and set aside a given period of time for viewing. Furthermore, the consumption of old media generally necessitated that the consumer be in

a given location, such as in front of an immobile television set. Of course, old media offers exceptions to these availability limitations such as cars, telephones, books, and newspapers, but these exceptions are inconsequential in contrast with the structure of new media.

Researchers have demonstrated that individuals generally prefer more choices to less, and much of new media's design is structured on this premise (Iyengar, 2000). Because there are no longer only ten-or-so choices of television channels, individuals can choose between a vast selection of different options; this expanded choice effects a very different selection behavior, as contrasted with deliberate and pre-planned selections. One researcher notes that "entertainment content is increasingly structured in an unscheduled format," adding that one key finding was that scheduled availability influences selection habits (Webster, 2007). New media environments (such as YouTube, Hulu, and On-Demand Cable) allow for a wide selection of options just prior to consuming the media, and this paradigm motivates impulsive selections that are not aligned with the long-term goals of those consuming the media (Hoch, 1991). It is this altered selection behavior that should give one pause when comparing the effects of new media to that of old media; the implications of this finding are more substantial than the simple fact of "altered selection behavior" would suggest. When we are presented with countless media choices at any time, at any place, our behavior is altered at all times.

The only thing more troubling than having unwanted altered behavior is forever adapting to it. In a study investigating "phantom vibration syndrome," researchers found that approximately two-thirds of the participants reported feeling that their phones were vibrating when they were not (Drouin, 2012). The findings suggest that individuals who use vibration mode on their smartphones learn to associate these vibrations with alerts of social interaction, which is an evolutionarily advantageous association to make (as social communication is a valued resource). The researchers go on to suggest that these "tactile hallucinations" might be an indicator of the brain's ability to form schemas for the interpretation of stimuli (Drouin, 2012).

The Internet Generation

Some psychologists and neuroscientists have started looking at the differences between those who grew up with the Internet and those who did not; one study found that the groups had vastly different abilities when it came to multitasking, and it showed neurological adaptations present in those who developed in new media environments (Meade, 2012). The demographic most affected by the proliferation of new media is that of teenagers and young adults, which provides a fairly precise sample for determining the psychological and developmental effects of new media (Panek, 2012). Because of how widespread certain types of new media are within the population (namely, social media like Facebook, Twitter, Instagram, etc.), this demographic has a strong social motivation to remain connected with peers constantly, and little motivation to schedule media consumption (Panek, 2012). At the same time, researchers have noticed some concerning trends among this demographic, including a marked increase in political disengagement, as well as a striking decrease in the amount of time spent on schoolwork (Pritzker, 2008). These findings, while not causal, beg the question of whether this influx of immediately-gratifying social media could lead to disinterest in political matters and to a deficiency in time spent on schoolwork. One psychologist studying the effects of social media suggested that social media's consumption serves as a distraction that encourages shallow thinking (rather than deep thinking) so that the consumer may quickly move on to the next topic (Macrae, 2010). This theory may offer some insight about the growing disengagement towards non-instantly-gratifiable activities by young people. An unrelated study found that those developing during the height of the Internet Age had an inability to forgo immediate gratification in favor of distant goals; this lack of self-control is associated with inferior scholastic performance, coping skills, and relationships (Tangney, 2004).

In one study conducted with a sample from seven middle schools in China, experimenters studied the effects of new media addiction among 1549 adolescents. Of the sample, 90% of the participants had used social media before, and the study showed that

15.6% of participants met the guidelines that define social media addiction (Huang, 2014). These adolescents who met the guidelines tended to be self-absorbed, bored in times of leisure, and talented at manipulation through social media to manage their online profiles (Huang, 2014). It is important to note that these correlated personality traits are not necessarily caused by addiction to social media; rather, it is possible that individuals who already had these attributes are more likely to become addicted to social media. These so-called "social media addicts," generally exhibited a wide range of phenomena including: mental preoccupation, experiencing adverse consequences due to media use, alleviation of negative emotions during media use, loss of interest in social activities, and negative impacts on both academic performance and social capital (i.e. benefits derived from preferential social treatment) (Huang, 2014).

A Society Transformed

When society rapidly adopted the Internet and built it into daily life, survival at workplaces became nearly impossible without Internet proficiency. This sudden societal adoption effects a new generation born into this alien environment that they did not evolve into. The internet allows individuals to do things at an unnaturally fast pace, resulting in an environment of constant instant-gratification; as people adapt to this new environment, they become accustomed to expecting instant gratification, and even become frustrated when they do not get it (Meade, 2012). If most of us have access to an infinite selection of instantly-gratifiable choices right in our pocket, at all times, it is important to consider how our brains might adapt to this unnatural context. This constant behavioral shift – from making conscious decisions that are more likely to align with our long-term goals to making impulsive decisions motivated by a vast selection of instantly gratifiable options – is changing who we are, as human beings. Research has definitively demonstrated that exposure to new media can affect levels of self-control, feelings of guilt, mood stability, social competence, stress level, and a plethora of other metrics (Panek, 2012) (Lee, 2014)

(Webster, 2007). Owning a smartphone causes us to feel stimuli that are not present, browsing social media causes us to think shallowly and judge quickly, and the vast majority of society simply accepted this foreign environment without question (Macrae, 2010) (Drouin, 2012). As more and more research sheds a troubling light on The Age of New Media, those living in it need to begin considering a balance between the many benefits of new media and the alarming way it is changing who we are.

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