Title
Virtual Reality: The Next American Meta-Medium

Permalink
https://escholarship.org/uc/item/5qb2w3x7

Journal
UC Merced Undergraduate Research Journal, 12(1)

Author
Dimaandal, Patricia

Publication Date
2020

DOI
10.5070/M4121046303

Copyright Information

Peer reviewed|Undergraduate

Virtual Reality: The Next American Meta-Medium

Patricia P. Dimaandal

Department of Cognitive & Information Sciences, University of California,

Merced

Abstract

This literature review investigates how virtual reality (VR) is the next "meta-medium"—"an instrument that directs not only our knowledge of the world, but also knowledge of ways of 'knowing' as well" (Postman, 2005, p.78), how we acquire knowledge. VR is referred to as "an artificial environment which is experienced through sensory stimuli provided by a computer and in which one's actions partially determine what happens in the environment" (Merriam-Webster). Five categories were analyzed to depict how VR may affect the development of American culture. The first category, Human Desire & Transcendence, focuses on the relationship of technology addiction and VR, presenting the idea that VR can increase technology addiction in America. The second category, Presence and Communication, discusses that language can change to fit with international communication and how VR can affect how people view themselves due to changes in language and the ability to be in a different space. The third category, American Consumerism, investigates how VR will affect American businesses. The fourth category, American Entertainment, explores how VR will affect "pseudo-context" amongst VR entertainment consumers. Lastly, the category Augmented Reality features how current professionals address Augmented Reality in laws and in turn, shows how VR would affect laws. From this literature review and analysis, VR can be interpreted as a meta-medium due to being able to be an instrument for new knowledge and may change how Americans can gain knowledge. As a meta-medium, VR can

affect our language, and thus, how we exchange information, how we see

ourselves, and how consumers interact with technology. These findings

suggest that VR developers and companies must take into consideration VR's

effects on their consumer base before supplying them as a product.

Keywords: *virtual reality, Neil Postman, meta-medium, America*

Virtual Reality: The Next American Meta-Medium

With Stanley G. Weinbaum's 1935 short story "Pygmalion's Spectacles," the concept of virtual reality came to be. While wearing the googles, Weinbaum's main character, Dan Burke, experiences a fantastical world, falls in love with a woman, and, in turn, views the alternate reality as the real world for a brief time. With the readers, they admired how virtual reality is like "a movie that gives one sight and sound…taste, smell, and touch….[and have] the story [be] all about you, [while] you are in it" (Weinbaum, 2007). Now, his spectacles have become the blueprint for many virtual reality (VR) headsets like the Oculus Rift and the Samsung Gear VR. Similar to Dan Burke's experience within "Pygmalion's Spectacles," the VR headsets can envision an environment for a player but within a computer-generated simulation of a three-dimensional image or environment.

As VR grows, it holds the potential to transform American culture due to possibly fitting in with multiple aspects of the modern American lifestyle: entertainment, education, production, business, among many other fields. VR also has traits similar to past technologies such as the printing press, television, and computers in which all of the technologies mentioned distribute information; due to those traits, VR qualifies as a "meta-medium," a term coined by Neil Postman, the author of *Amusing Ourselves to Death: Public Discourse in the Age of Show Business.* Postman determined that a "meta-medium," like television, is "an instrument that directs not only [people's] knowledge of the world, but [their] knowledge of *ways of knowing*

as well" (Postman, 2005, p. 79). With VR on the rise, virtual reality may transform many aspects of American culture, from communication, identity, consumerism, and entertainment, and become the next "meta-medium" in America, creating an "Age of Virtual Reality."

Literature Review

VR: Human Desire and Transcendence

Similar to past "meta-mediums" in America, such as the printing press and the television, virtual reality was born due to the human desire to communicate ideas for the sake of an American Dream; one in which Americans strive for the goal of success. With the printing press, people desired to spread their ideas, stories, and knowledge faster; later, with the television, it furthered a more rapid spread of ideas and increased the desire for entertainment rather than of knowledge. In general, humans want to explore each other's ideas and these "meta-mediums" allow an exploration of new ideas that result in a culture change. In Ken Hillis' book, *Digital Sensations: Space, Identity, & Embodiment in Virtual Reality*, the Associate Professor of Media Studies at University of North Carolina, Chapel Hill addresses that there is "a lack of theorization exist[ing] that would provide greater understanding about why VR, both as a technology and as an idea has emerged at this cultural moment" (Hillis, 1999, p. xiii). When Hillis considers how VR was introduced, he observes how television and books brought the idea of the future and VR to life through rose-tinted glasses in which VR seems only wholesome and good. The introduction of each "meta-medium" began with a similar hope for improving society without realizing the negative consequences of each "meta-medium." With America in mind, "the experiences VR affords are a 'proxy for the American dream – to be at the centre, the President, a star in your own Hollywood movie'" (Hillis, 1999,

p. xiii). Through the possibility of experiencing a fully realized dream

instantly, American consumers would be enamored by VR and attempt to be

in VR more than reality itself. Eventually, it could result with VR being

addictive to people since it is easier to achieve one's goals through VR

instead of in real life and that people today have a growing reliance on

current technology. Currently, there are many studies investigating

technology addiction. In the United States and Europe, "surveys…indicated

alarming prevalence rates between 1.5% and 8.2% (Cash, 2012). Alongside

this data, the Pew Research Center found that "one-in-five Americans – and

36% of 18 to 29-year-olds – go online 'almost constantly'" (Pew Research

Center, 2015).

It does not help that, according to Joel Stein, a former columnist for

Time Magazine and writer of "Inside the Box," many people are "equally

aghast that [people are currently] stuck in a pre-virtual world" (Stein, 2015,

p. 43). VR now is nothing like the virtual reality many science fiction fans and

VR researchers desire. The general idea that developers and science fiction

fans are unsatisfied with the technology indicates that development for VR

will continue. This development will potentially make VR a greater "meta-

medium" than past technologies due to VR being presented as a pathway for

escapism from the American daily life. The potential escapism relates to how

Stein observes that in the "early Industrial Revolution, machines [have] killed

people [and now] computers are killing a part of [people]" (Stein, 2015, p.

48). As individuals develop VR and create commercial products for VR, it is

possible that, along with instant gratification and escapism, technology addiction will increase due to the potential beautiful worlds VR would have. Humans would transcend the physical world simply because life in VR seems easier than living in the real world; they could feel their own success at their fingertips in a matter of minutes instead of spending half of their lifetime for a job to achieve their American Dream. Nonetheless, by spending much of life in VR, humanity may evolve to be better suited to live in VR instead of the real world especially due to the possibility of communication evolving in VR.

VR: Presence and Communication

One effect "meta-mediums" have on society is to create the opportunity for communication to develop drastically. With books, words were elegantly tailored to fit intellectual arguments which transferred into people's well-articulated speech patterns. With television, striking, singular words and short-cuts made conversations faster-paced and quick to distribute between speakers. As technology continues to improve, it is possible that VR will make human languages advance quickly and create new languages due to VR consisting of new worlds to explore. VR may additionally create a new world-wide language due to VR hypothetically being able to be accessed by people all over the world in the future. The new worlds in VR provide an environment and necessity to create new ways of communicating since a world-wide system needs to be easily understood by everyone. VR then "seems [to be] a natural candidate for a new

communications medium [and] evoke unprecedented ways of sharing [because] imaginary things and events [can be shared] without using words or real-world references" (Heim, 1994, p. 116). This is significant as this is a quality shared by other meta-mediums like the printing press and the telegraph. On one hand, the printing press' discourse was "generally coherent, serious, and rational" (Postman, 2005, p. 16). On the other hand, "the telegraph introduced a kind of public conversation whose form had startling characteristics:…sensational, fragmented, [and] impersonal" (Postman, 2005, p. 70).

However, one aspect of virtual reality that may be different from other "meta-mediums'' is its hypothetical ability to affect people's identity (self-understanding) and presence in the real world in contrast to virtual reality. This is because virtual reality, according to Frank Biocca and Mark Levy's *Communication in the Age of Virtual Reality*, "is defined broadly as the technological system aimed at creating an electronically simulated environment in which the user experiences a sense of presence" (Biocca & Levy, 2013, p. 303). The ability to affect a person's identity can have relation to the Avatar Dream, a concept explored by the authors of "Reimagining the Avatar Dream: Modeling Social Identity in Digital Media," D. Fox Harrell and Chong-U Lim. According to the article, the Avatar Dream is defined as having "two elements[—one] that is technical, enabling users of these virtual surrogate selves to have experiences beyond those they encounter in the physical world…[and] the second is experiential, enabling users of the these

virtual surrogate selves to have experiences beyond those they encounter in the physical world" (Harrell & Lim, 2017, p. 52). By enabling "virtual surrogate selves," VR users can act out multiple aspects of themselves which can cause difficulty with the development of young Americans if VR is exposed to American minors. According to Ken Hillis, it can be seen that VR supports the "fragmentation of identity and renders proliferating individuals subidentities and their experiences into commodity form" (Hillis, 1999, p. 205). Today, people often differentiate themselves with different personas for the occasion such as: being a friend, a professional, a suitor, and more simply by using technology to mask who people are originally. When VR comes into play, it is possible that American children will be highly affected and create mental instability within their own identity due to early exposure to VR. These divisions will affect how future generations will connect to each other. Nonetheless, VR also "radically shrinks, if not eliminates the actual distance between the user's eyes and HMD screen by less than an inch" (Hillis, 1999, p. 205). The constant usage of VR will affect the development of young generations of humans' eye sights, as likely, their eyesight will be more adjusted to VR instead of real life if children are exposed to VR early. It is possible that these biological changes can happen and impact American children's development. According to the American Academy of Ophthalmology, VR can lead to eye strain, fatigue, dizziness, and motion sickness (Mukamal, 2017).

Nonetheless, American VR users need to be able to feel that they are present in virtual reality in order for VR to affect American culture drastically. In Jack Loomis' short paper, "Presence in Virtual Reality and Everyday Life: Immersion within a World of Representation," Loomis demonstrates how the senses of vision, hearing, and touch support the "idea that the nonself is a representation of the external world given to [people] by the spatial senses" (Loomis, 2016, p. 171). If VR interacts with a person's vision, hearing, and touch, VR will be as real as the physical world, but better, due to VR's potential for fulfilling self-gratification instantaneously. From there, a VR user could create a stronger sense of self-imagination that surpasses the physical world's boundaries. This may have the potential to lead to an addiction or behavior compulsion to VR. Overall, VR will create its "own definition of discourse," which are similar characteristics to the ones Postman describes for another meta-medium, the telegraph, and its ability to introduce a "large scale irrelevance, impotence, and incoherence" (Postman, 2005, p. 65).

While developing VR, according to Michael Heim's *The Metaphysics of Virtual Reality*, many researchers have diverged into different research paths to investigate VR: simulation, interaction, artificiality, immersion, tele-presence, full-body immersion, and networked communication. Simulation describes how realistic VR should be, while artificiality describes how artificial the simulation is. Immersion, tele-presence, and full-body immersion go hand and hand to let the VR user explore the simulation. Lastly, networked communication introduces the social aspects of VR to ensure VR's

realism. These research subjects eventually merged to give rise to the VR

systems being sold today.

VR: American Consumerism

By investigating virtual reality's multiple possibilities, American

businesses have heavily invested in VR and continue to do so today. In Joel

Stein's *Time Magazine* cover article, "Inside the Box," he describes the

history of commercial VR's development and increasing interest. VR first

became popular in American businesses due to "Facebook's investment in

Oculus [and ends up jolting] companies into action, sending a market signal

that VR was here to stay" (Kugler, 2017, p. 15). Before Facebook's

intervention, the introduction of VR systems like the Oculus Rift, a VR

headset created by Oculus, was similar to "cellphones, [in which] everyone

else will mock the early adopters for mindlessly embracing unnecessary

technology with no useful purpose" (Stein, 2005, p. 42). VR seems strange to

the general population and many believe VR will not be attainable. However,

by observing how companies invest in VR and taking in the knowledge of

how corporations define aspects of American culture, it can be noted that VR

will surpass the early mockers in a similar manner to how cellphones and

computers did.

Not only is VR an attractive commercial product, VR is able to change

how the American workplace operates. In Logan Kugler's article, "Why

Virtual Reality Will Transform a Workplace Near You," the freelance

technology writer takes note of how virtual reality will affect different kinds

of workplaces like medical industries and business meetings. According to

Kugler, "[c]ompany rep[resentative]s use the [VR] technologies to better

train for customer-service interactions and to troubleshoot issues faster in

real time using digital models [and] manufacturers rely on the technology to

better collaborate on the design and maintenance of components" (Kugler,

2017, p. 16). In the medical field, "hospital systems employ VR and AR to

remotely train doctors faster, less expensively, and more effectively"

(Kugler, 2017, p. 16). Despite the aforementioned benefits, these medical

trainees may end up disregarding their own physical needs due to VR's

information distribution. Its speed of information distribution can be

detrimental to human health due it not providing a way for humans to rest

after periods of VR usage without intervention. VR would provide only

constant information that compresses into human brains, overwhelming

users. The information could even be irrelevant if VR was not taken carefully

into the consumer's consideration; this is similar to how Neil Postman

predicted that television would distribute irrelevant information for its own

consumers.

VR: American Entertainment

With other "meta-mediums" in mind, most of the "meta-mediums"

gained popularity due to being presented as forms of entertainment. For

one, television presented new knowledge as entertainment to the point

where viewers desired to only obtain information entertainingly. People who

lived in an age of television would not dive into blocks of text to find the

information they need. Rather, people dealt with "pseudo-context[—]a structure invented to give fragmented and irrelevant information a seeming use" (Postman, 2005, p. 76). The "pseudo-context" from television became the information that viewers thrived off of—each piece of information given through entertainment holds no meaning except for the purpose of pleasure according to Postman (Postman, 2005, p. 87). It is possible that the pseudo-context will be a part of VR due to an immense number of worlds and spaces individuals can create and occupy. VR users would spend huge amounts of time in a VR world in a similar fashion to gaming and technology addiction. From there, VR holds a potential infectious space for imagination's continuous growth like other "meta-mediums" have in history.

Nonetheless, with a gaming mindset in today's younger generations, American entertainment culture would continue to emphasize the existence of specific categories and limit imagination. For example, in single-player video games, there is typically only one overall goal, which is to complete it —there is often minimal time to consider other possible options when the system does not even allow other solutions. The collective mindset of binary, guided options would transfer over to new generations if VR's popularity increases with children. It is also possible that people will gain multiple identities due to being exposed to different worlds in VR games such as VRChat and other similar platforms. These possible phenomenons of people transitioning to VR relates to how Postman states that "there is nothing wrong with entertainment…[t]he problems come when [people] try to *live* in

them" (Postman, 2005, p. 77). During VR's development, there is a new technology related to VR that will bridge VR and the physical world, augmented reality (AR). AR would bring people, and Americans in general, closer to VR's true potential as "meta-medium."

VR: Augmented Reality

It may seem VR is developing successfully, however, a VR developer must question how VR headsets and other systems can be accessible to all Americans. This is one drawback to consider when thinking how virtual reality can become the next "meta-medium." It can be possible that VR developers would never obtain a VR that would be the next "meta-medium;" there is a lack of knowledge, or lack of discovery, on how to provide the correct software and hardware to sustain the ideal VR for Americans.

Even so, one possibility on how to improve VR to "meta-medium" potential is through a related technology called augmented reality (AR)—"a blend of VR with plain old physical reality" (Wassom, 2015, p. 19). In the 21st century, augmented reality has developed gradually, by companies like Niantic, Inc., to the point where there are laws regarding augmented reality. The requirement of law is related to how other "meta-mediums" went through stages in human history where "meta-mediums" like books were banned or how television today has censorship. "Meta-mediums" are powerful, thus, they require limiters such as laws and regulations. In Brian Wassom's book, "Augmented Reality Law, Privacy, and Ethics: Law, Society, and Emerging AR Technologies," the AR/VR attorney brings awareness that

technologies like VR and AR "offer users the ability to psychologically [put] themselves in artificial content to a degree unmatched by technologies [and that] ability…is ethically neutral" (Wassom, 2015, p. 331). In relation to Neil Postman's book, like VR, AR is able to affect many aspects of American law topics, such as privacy, marketing, e-commerce, intellectual property, real property rights, personal injury, criminal law, civil rights, litigation procedure, politics, personal ethics, addiction, and pornography. This is similar to how television affected aspects such as religion, education, and distribution of knowledge but in possibly more dangerous ways. Thus, since AR and VR are related, VR would affect American society in a similar manner as to AR.

VR: Meta-Medium

As a potential "meta-medium," VR holds many similarities to past "meta-mediums" such as television and books. On one hand, VR is similar to the printing press because they both present new ideas intellectually and provide a connection between people and knowledge. The printing press allowed readers to "absorb truths printed in books at a remove from the direct challenge of discussion," establishing the printed material as an "absolute truth" (Heim, 1994, p. 44) rather than something that required evidence as supporting information. The printing press also changed the workplace historically in a manner similar to how VR is changing the workplace today. However, VR would be faster than how people distribute information with the printing press discussed by Postman. The printing press' ability to change business operation is due to the "fondness for outlines[:]

teachers drill outlining in grammar school[;] lawyers, scientists, and technical writers use logical outlines and flowcharts[;] business and industry convey complex ideas and hierarchies by means of outlines and charts" (Heim, 1994, p. 45-46). If the printing press provided organization, VR could provide the opposite. VR holds the ability to provide too much information in a similar fashion as the Internet. However, the disorganization of information will not be only text and video based but also experience-based. Based on the previous literature and articles, VR would provide experiences that would be incomparable to the real world and the "meta-medium" would present itself as supposedly better than the real world—if it provides experiences that the real world cannot provide.

On the other hand, VR is also similar to television because they both present a huge emphasis on entertainment due to beginning as platforms of entertainment in their early stages of commercial development. VR being a platform of entertainment is a concern because "[e]ntertainment is the supraideology of all discourse…[n]o matter what is depicted or from what point of view, the overarching presumption is that it is there for [viewers'] amusement and pleasure" (Postman, 2005, p. 87). Since VR creates new worlds, it is possible that VR users will have VR addiction due to how the worlds will be in comparison to the physical world. However, the content of those worlds contains irrelevant information for those who live in the physical world. Like television, the irrelevant information from "meta-mediums" encourages a culture of entertainment. With VR possibly creating

more irrelevant information, it is possible that American culture will be a greater culture of irrelevant information based on entertainment.

From there, VR would potentially enhance changes from past "meta-mediums" and new changes for America as well. According to Thomas Langan's *Surviving the Age of Virtual Reality*, "with the invention of first language and then writing, man became potentially twice removed from reality…[and] [n]ow people can get several more removes from immediate reality [due to VR]" (Langan, 2000, p. 120). Based on Langan's argument, no one would know the actual truths in their world if VR were made, and it is possible that anything created in VR would be treated as more real than actual reality itself. Taking this into consideration, it would be wise to further research VR's health hazards before implementing VR completely into daily American life. Past societies were not able to predict the negative possibilities such as how television "occurred simultaneously with the decline of America's moral and political prestige" (Postman, 2005, p. 86). If television staged America as it is today, VR has the potential to stage America more powerfully than television. For example, Frank Biocca and Mark Levy believe that VR "may become too important, too wondrous, and too powerful a medium to permit disciplinary ignorance and passivity toward what may become the next dominant medium" (Biocca & Levy, 2013, p. vii). The average American can only educate themselves to prevent most of VR's negative possibilities when VR is more widespread. VR could lead to further dehumanization of American culture. However, it is the choice of those

involved—from the creators to the consumers of VR development—to

determine where VR leads and how it influences Americans in an "Age of

Virtual Reality."

Works Cited

Biocca, F., & Levy, M. R. (2013). *Communication in the Age of Virtual Reality*.

Taylor & Francis   Group. http://dx.doi.org/10.4324/9781410603128

Cash, H., Rae, C. D., Steel, A. H., & Winkler, A. (2012). Internet Addiction: A

Brief

        Summary of Research and Practice. Retrieved from

                https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3480687/

Harrell, D. F., & Lim, C.-U. (2017). Reimagining the avatar

dream. *Communications of the*

        ACM, 60(7), 50–61. http://dx.doi.org/10.1145/3098342

Heim, M. (1994). *The Metaphysics of Virtual Reality*. Oxford Scholarship

Online.

        http://dx.doi.org/10.1093/acprof:oso/9780195092585.001.00014

Hillis, K. (1999). Digital Sensations. *University of Minnesota Press*.

        http://dx.doi.org/10.5749/j.cttts6mg

Kugler, L. (2017). Why virtual reality will transform a workplace near

you. *Communications of*

        the ACM, *60*(8), 15–17. http://dx.doi.org/10.1145/3105444

Langan, T. (2000) *Surviving the Age of Virtual Reality.* Columbia: University

of Missouri Press.

        http://ucmerced.worldcat.org/oclc/45844360.

Loomis, J. M. (2016). Presence in Virtual Reality and Everyday Life:

Immersion within a World

of Representation. *Presence: Teleoperators and Virtual*

Environments, *25*(2), 169–174.

http://dx.doi.org/10.1162/pres_a_00255

Merriam-Webster (n.d.). Virtual Reality. Retrieved from

https://www.merriam-webster.com/dictionary/virtual%20reality-

Pew Research Center. (2015, December 4). *One-in-five Americans – and*

36% of 18- to

29-year-olds – go online 'almost constantly'. Retrieved from

https://www.pewresearch.org/ft_15-12-4-online-constantly/

Postman, N. (2005). *Amusing Ourselves to Death: Public Discourse in the Age*

of Show   *Business*. Penguin Books.

Stein, J. (2015). Inside the Box. *Time*, *186*(6), 40–49.

http://search.ebscohost.com/login.aspx?

direct=true&db=a9h&AN=108752595&site=ehos   t-live

Wassom, B. (2014). *Augmented Reality Law, Privacy, and Ethics: Law,*

Society, and Emerging AR Technologies. Elsevier Science & Technology

Books. https://ebookcentral.proquest.com/lib/ucm/detail.action?

docID=1887728.

Weinbaum, S. G. (2007). *Pygmalion's Spectacles*. The Project Gutenberg.

http://www.gutenberg.org/files/22893/22893-h/22893-h.htm