This week's *Laptop* was inspired by a news article about Oculus Rift.  Do you know what that is? How about Hatsune Miku?  Do you know who she "is"? Do you know what an avatar is? Have you ever heard of Second Life (SL)?  Do you have any idea what an MMOG is?  An MMORPG?  An ARG?[1]

What all of these have in common is that they have something to do with "virtual reality," or "VR." Virtual reality is a term used to describe a three-dimensional, computer generated environment that can be explored and interacted with by a person. That person becomes part of this virtual world or is immersed within this environment and, while there, is able to manipulate objects or perform a series of actions.

For true "virtual reality," the user wears a head-mounted display (such as Oculus Rift) that displays three-dimensional images as part of the experience. Some systems enable the person to experience additional sensory input such as sound or video that contributes to the overall experience.[2]

Now the truth of the matter is that I'm quickly going to "say more than I know" about such things, but the Oculus Rift piece that I read sparked my interest, and I've been doing some reading this week.  I think my interest was also piqued by a recent article in *TIME* that reported that some colleges have begun collegiate gaming teams that they hope will eventually be sanctioned by the NCAA (!).

If you haven't been paying attention to this development, you may be surprised to know that online gaming is a multi-billion dollar business and that worldwide, there are more than *500 million* persons who play online games for at least an hour a day.  Nearly *200 million* of these persons are in the United States, with average play being two hours and fifteen minutes a day.  According to one source, 99% of American boys under 18 and 94% of American girls under 18 do online gaming for at least an hour a day.

**And more than five million Americans do online gaming for more than 40 hours a week**.  Do I have your attention yet?

If you're not "a gamer," and if you've paid any attention at all to the phenomenon of online gaming, you may have a negative opinion of such activities, and if so, you aren't alone. Stanford psychiatrist, Dr. Elias Aboujaoude, noted that "What I see, more and more, is that we are starting to resemble our avatars [online personas] . . . .  Society at large is becoming a more angry, uncivil place. . . .  We should ask ourselves if one reason we've become so uncivil is because of what we do online and how we act on our blogs and in our chat rooms."[3]

---

[1] MMOG = Massively Multiplayer Online Game; MMORPG = Massively Multiplayer Online Role Playing Game; ARG = Alternate Reality Game

[2] www.vrs.org.uk/virtual-reality/what-is-virtual-reality.html

[3] Ki Mae Heussner, "Are You Your Avatar? Book Details Dangers of the 'E-Personality,'" ABC News (1-27-11).

The *Wall Street Journal* reported several years ago that nearly 40 percent of men and 53 percent of women who play online games considered their virtual friends equal to or better than their real-life friends, and more than a quarter of these gamers said the emotional highlight of the past week occurred in a computer-generated world.[4]



Numerous studies have suggested that online gaming is addictive, that it reduces empathy and desensitizes to violence. Many players use virtual worlds as a way to escape from problems in real life. And, as with any avoidance behavior, these problems can get worse and worse over time, eventually becoming unmanageable.[5]

Some alternate realities, such as *Second Life*, permit fairly unrestrained expressions of sexuality, and it appears that increasing numbers of gamers are having "virtual affairs" with the avatars of other persons online. I saw one fellow who had actually "married" his avatar beau, preferring her to real humans.

While these dangers are real, and need to be taken seriously, I've been interested to also read about the positive effects and potentials of virtual reality games. These seem to fall into five broad categories:

## ACHIEVEMENT

- Most MMOGs have clear and defined processes by which one advances in the game, and these processes require the development and use of skills such as problem solving and analysis, resource management, logic, planning, and strategy.
- MMOGs permit (and require) trial-and-error learning in the context of a real-time feedback loop, which permits accelerated learning.

## IMMERSION

- Role playing can allow persons to experiment with different ways of relating to other people, some of which can translate positively into non-virtual relationships.
- Hobbies and games are supposed to be "fun," and not necessarily "productive."
- Gaming can be relatively inexpensive entertainment when compared with many other pursuits or hobbies.

## SOCIAL EFFECTS

- To some degree, MMOGs are global chat rooms in which persons can make and develop fairly healthy relationships with the persons behind other avatars.
- MMOGs provide a sense of belonging to a group or clan that can be positive.
- MMOGs provide opportunities for altruistic behavior as well as for competitive, negative, or destructive behavior.
- Properly chosen, MMOGs can develop qualities of optimism, curiosity, determination, and resilience (learning faster from mistakes).

---

[4] *Alexander Alter, "Is This Man Cheating on His Wife?" The Wall Street Journal (8-10-07);* http://online.wsj.com/public/article/SB118670164592393622.html?mod=blog
[5] http://cs.stanford.edu/people/eroberts/cs181/projects/virtual-worlds/psychology.html

- Other social effects include the development of delayed gratification, managing the structure and deployment of teams, patience, and the value of playfulness.

**THERAPEUTIC EFFECTS**

- MMOGs provide an outlet for competitive emotions.
- MMOGs provide the opportunity to develop specialized expertise that results in enhanced self-respect as well as respect from other players.
- MMOGs can provide needed stress-relief and simple enjoyment, as with any hobby or pastime.
- The distraction MMOGs provide can actually provide a measure of pain relief to persons who live with intractable emotional or physical pain.
- For many people, real life isn't much fun at all, and provides few opportunities for "epic wins." MMOGs can provide such opportunities. As one unemployed person wrote, "In my virtual realities I can experience challenge, teamwork, creation, and a general sense of accomplishment that has been lacking in my unemployment reality."

**TRANSFERABILITY**

- The large amounts of money to be made in the gaming world spur investment and research that spills over into many other areas of life, just as has happened through NASA research for many decades. The faster graphics processors found in virtually every computer these days are a result of such transfers, as are the sophisticated 3-D rendering effects to which we've become accustomed in animated movies.



- Virtual reality is a significant component of the training of pilots, astronauts, naval officers, race car drivers, physicians and surgeons, and many similar professions. I shudder to think how many ships we would have sunk at Officer Candidate School had we not been learning ship handling on simulators!

I don't know how it is for you, but all of these ponderings have set my head to spinning. You can continue your exploration at these sites, among many others:

www.ted.com/talks/jane_mcgonigal_gaming_can_make_a_better_world?language=en
www.crayonphysics.com/
www.xeodesign.com/category/the-4-keys/
http://funbasedlearning.com/
http://q2l.org/ Quest to Learn
http://eterna.cmu.edu/web/ (make molecules, advance science)
http://www.wired.com/2012/07/ff_rnagame/

Dave