

Virtual reality has arrived, and it's going to change everything

2016 has been described as the "year of VR", thanks to the profusion of virtual reality headsets that have been released by the big electronics manufacturers, including Sony, Samsung, Facebook, Google, and HTC.

The concept of strapping a virtual reality headset to one's face seems strangely retro, because the concept has been around for a while. A rash of such devices emerged in the 1990s, including the ill-fated Sega VR and the equally ill-fated Nintendo Virtual Boy. And who can forget the Red Dwarf episode from 1993 - "Gunmen of the Apocalypse" - which featured the hapless crew of Starbug in a wild west-style arena, fighting a rogue computer programme, courtesy of some chunky, flashing head gear.

And herein lies the rub. VR has always been the stuff of tomorrow - imagined in countless science fiction stories, and by the execs of tech companies, keen to find the "next big thing". But that "tomorrow" has always been a day away, in the sense that the technology has always lagged behind the concept. Hence - so many false dawns, failed prototypes, duds, turkeys and commercial flops.

Today, the situation is different, because the technology *has* caught up - thanks to the smartphone.

The fathomless billions that have poured into this mega-industry have resulted in sustained global innovation for many years, which has given rise to radically shrunken components that are vastly more powerful than they were just a few years ago. The average smartphone now packs motion processors, a gyroscope, an ultra-high definition screen, and the kind of computing savagery that would once have required the basement floor of a large building, and tens of millions of pounds.

Without this relentless, intensive drive to pack so much tech into a mobile phone, virtual reality would still be nowhere near breaking through to the mass-market. It would have remained in our affections as one of those "technologies of the future" - like the jet car, and the hover board.

As things stand, the VR headset has very much come of age - as evidenced by countless YouTubers strapping them on their bewildered grandmothers and sending them off to do the loop-the-loop, with life-threatening (if hilarious) results.

What are we to make of this "future" technology, which has arrived in the here-and-now?

Firstly, we should remember that technology can be used and mis-used in equal measure. The classic example of this is atomic fission; the power latent within the

atom, which can wipe out cities, or provide cheap, plentiful power - depending how it is utilised. One application of the technology *serves* the population, the other *vaporises* it.

I think you'll agree - that is quite a difference.

Another example - communication over the Internet. Something so fabulously convenient and useful can also prove ruinous to people's lives - such as the hapless souls who become so addicted to online role-playing games, that they forget to feed themselves. Or their children.

Let us consider, briefly - how much more addictive will fully-immersive VR prove to be, in comparison to the old format?

I suspect that it will be incalculably more addictive.

The videos I have seen online confirm that the virtual environments which have already been designed for the fledgling platforms are fairly realistic, in a way that could never have been said of the early systems from the 1990s. Head tracking is reliable and smooth, detail levels are high, the illusion of depth is convincing, and the experience is free from flicker and other unwanted intrusions. In other words, these machines - which are currently being delivered into people's homes - are highly sophisticated already. The surface of what this technology is capable of has not yet been scratched.

What is the technology capable of? Nothing less than creating a perfect illusion of reality, in an arena in which anything is possible.

Put like that, we have the perfect narcotic - because what is the drug experience, if not an augmentation of (at the very least), or a *replacement for*, reality?

It is no longer purely within the bounds of science fiction dystopia to imagine a time when highly capable virtual reality is cheaply available to the masses - much as smartphones are now. For those who live dull, troubled, or unsatisfying lives - consider the allure of a fully immersive system that can remodel every aspect of an individual's reality. Every conceivable human experience is within reach, all the time.

Just look at the hunger that already exists to avoid living in the moment. The computer games industry is now bigger than Hollywood, because games are *more immersive* than films. Mobile phones have evolved into giant hand-held screens, which are windows into a sparkling world where everything is accessible. Voice assistants are styled as personal butlers, which offer up a vision of technology working intelligently for us. But these unquestioning, unblinking, always-on

servants will let us waste time, and undermine our own best interests, just as easily as they will help us. That is because the companies that build the virtual environments, and the assistants, are interested only in parting their customers (and potential customers) from their cash.

As is usually the case, it will be the most vulnerable in society who will suffer most in the age of truly immersive VR. Partly that is because they have the most to escape from, living as they do in deprived areas, which have been starved of investment. Immersive VR is the ultimate escape. People with mental health issues may find navigating the virtual world particularly problematic, but I would suggest that anyone with an addictive personality will find it very hard to break away from their tailor-made, virtual paradises, and cut it for any length of time in the humdrum reality of their un-digitised lives.

A few years ago I made the mistake of getting a phone contract with a PlayStation 3 thrown into the deal. I figured I would hook it up to my projector and play Grand Theft Auto 4, and annoy my housemate by broadcasting the chaos of carjackings and gunfights at a healthy volume.

That is exactly what I did. And I can't say it wasn't fun. Sitting in my darkened room, with a few beers, I embarked on my crime spree. I loaded up with weapons and I robbed banks. I did all the usual things. And I found that the more time I spent playing the game, and the better I knew my way around the city, the more I *wanted* to play it. I had *invested* in the experience. But once the game was switched off, that investment was gone. All I had left was my life, outside the game.

I recognised what was going on because I remembered playing *Lemmings* as a child, and feeling much the same way. The magnetic pull of the game, the raw addiction that can keep you glued to the screen for hours.

So I got rid of the Playstation 3, and I didn't miss it when it was gone.

My feeling is that computer games are highly addictive, with the potential to become more addictive, as they become more realistic. Immersive virtual reality represents a zenith in that upwards climb, and will cause massive, massive problems for people who already struggle to switch off *World of Tanks*.

That is not to say, however, that I am down on the new technology. Far from it! As a tool, and as a new medium for consuming a range of media, it interests me, and excites me, a great deal.

Make no mistake: the widespread roll-out of VR will profoundly impact how we interact with the world. Even those who would never normally play computer games,

or have any interest in the technology, will find themselves trying the headsets out in phone shops, where they will be bundled free with contracts.

And what might be *worth doing* with these newfangled gadgets?

Here's one idea.

Imagine a Mars rover tricked out with a 360 degree camera that is always on, and live streaming back to Earth. Then imagine being able to pop your VR headset on in the comfort of your own home, and seeing what *it* sees.

Now just think about this for a minute.

With a 360 degree field of view, you can turn your head and look anywhere on Mars. At any time. This means, that as the rover wanders about exploring the surface, you could tune in and be the *first person* to see a particular view of Mars. One Martian morning, you might be the *first person* to see the sun wink over Olympus Mons - a shield volcano more than twice the height of Everest.

If that prospect doesn't get your brain dribbling, then you and I are very different people.

I could go on.

Think about other space probes, sent out with 360 degree camera tech. We could observe the rings of Saturn, looming huge from the surface of Titan - Saturn's largest moon. We could experience a close pass of the sun during a heavy solar storm. We could plunge into the atmosphere of Jupiter, or explore the surface of its ice-moon, Europa.

Here on Earth, we could send drones into the deep ocean trenches, and we could immerse ourselves in the fabulous alien environments that exist on our own planet. Maybe a volunteer programme could be set up, comprised of people with VR headsets keeping an eye on conservation areas, from tiny solar-powered drones, wandering the jungles and deserts. Maybe we could use this technology to educate ourselves, and build a better world.

I have no doubt that this technology can be a force for good, rather than a self-inflicted torment upon humankind. However, for this to work, corporate interests must be balanced out by not-for-profit collectives, who will seek to promote the mind-expanding potential of VR. The welfare of the individual - and the natural world - must triumph over the winner-takes-all capitalist doctrine that has caused so many problems already.

Having said that, when my mobile phone provider dangles the latest VR headset in my direction in 2023, I probably won't have the fight in me to resist. I will scramble my way into the box just like everyone else, and goggle at the violence, and photo-realism of Grand Theft Auto VIII.

Hopefully I'll remember to take it off once in a while.

April 2016