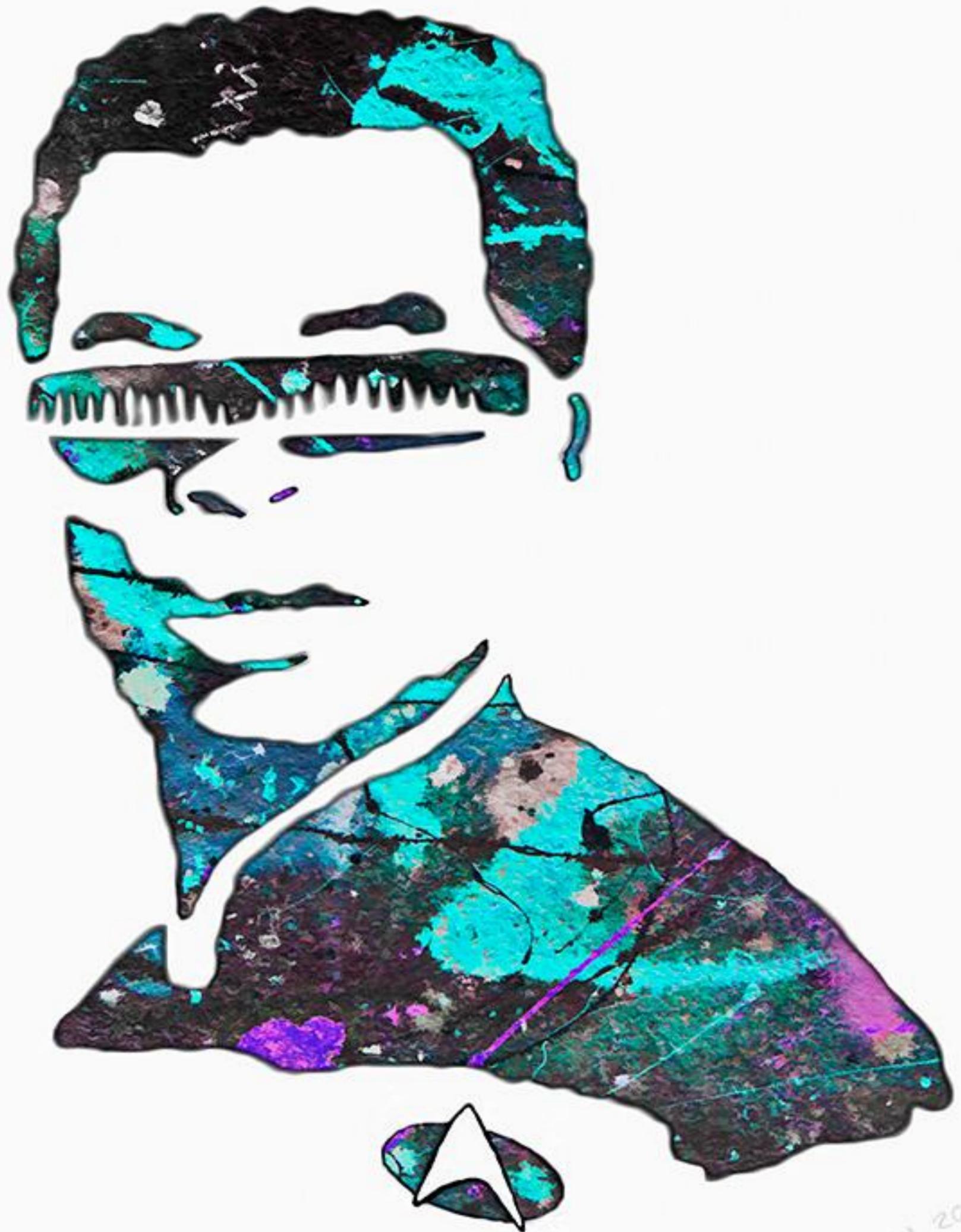


Brave New World

AUGMENTED REALITY



Digital Natives with a Cause? Newsletter

Volume 10 Issue 2 | May 2012

CONTENTS

Editor's Note – *Nilofar Ansher*

Augmenting Expectations – *Arjun Jassal*

Digital Dualism versus Augmented Reality – *Nathan Jurgenson*

Web Trails – *News and Features*

Picasso Inside a Robot? Why Not! – *Frank Odongkara*

Paper.ly – Latest from Academia – *Mark Graham*

Has Anyone Seen Sara? – *Anand Jha*

As Real as it Gets – *Divya Srivastava*

Editor Recommends

The World Seen Through Glass

We are all Cyborgs – *Nishant Shah*

Augmented Divinity – *Fernanda Tusa*

Contributor's Profiles



COVER IMAGE CREDIT: **BYRON O'NEAL**

LAYOUT, DESIGN, COMPILATION:

NILOFAR ANSHER

<http://www.trailofpapercuts.wordpress.com>

The 'Digital Natives with a Cause?' newsletter is brought to you by The Centre for Internet & Society, India, and HIVOS, The Netherlands, as part of the 'Digital Natives with a Cause?' research inquiry that looks at the changing dynamics of youth, technology and change in the Global South: <http://www.cis-india.org/digital-natives>

Download previous issues of the newsletter:

<http://bit.ly/wMh4f2>



EDITOR'S NOTE

D. S. Halacy's *Cyborg: Evolution of the Superman* in 1965 featured an introduction which spoke of a "new frontier" that was "not merely space, but more profoundly the relationship between 'inner space' to 'outer space' – a bridge...between mind and matter."

Could Augmented Reality be likened to this new frontier? In its simplest usage, AR allows the physical world of light, sound and objects to be enmeshed with the virtual world of bits and bytes. Basically, it's a way to add layers of digital information to our material world – augmenting our reality with an extra pair of eyes or hands if you will. From a historical perspective, however, AR is hardly a barrier-breaking technology. Haven't we always been pushing the limitations inherent in our bodies by augmenting ourselves with tools, implements and inventions? Several millennia's worth of artefacts have aided our symbiosis with the environment, be it toys, weapons or art.

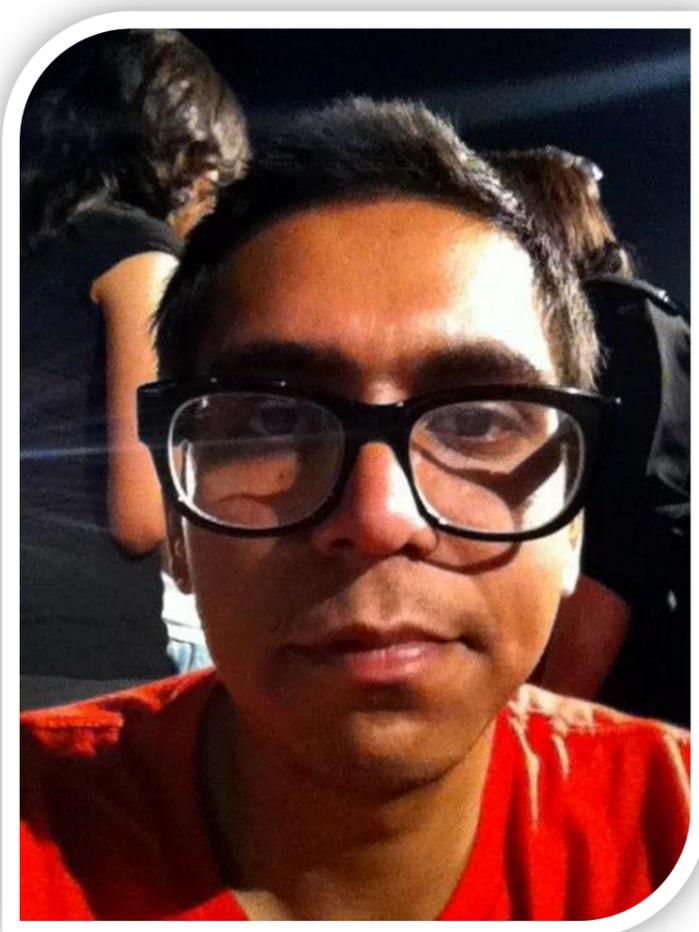
AR pioneers, however, are promising a step beyond viewing technology as merely an *extension of us*: they promise a seamless, material-digital mesh of all aspects of our life. Moving beyond its entry credentials of being an entertainment or navigation-related aid, AR is poised to become an ordinary and everyday technology that changes the way we interact with the world: medical procedures that foresee the outcome of the operation; mapping, navigation and transportation through 3D visualization; music that is not just heard, but seen; graffiti and archaeology that can be experienced through the lens of the past and the present, simultaneously. Nishant Shah pares the issue to its root: the most intrinsic forms of technologies are the ones that we don't even recognise as a part of our innate mental make up.

Where science fiction dazzles, it also sparks apprehensions of misuse, security and a failed vision. The Google Glass project, with its *all-seeing eye*, has raised concerns of privacy and surveillance, with the projected fear of citizens being constantly monitored by the wearers of the Geordi La Forge-like *Star Trek* spectacles.

My take is merely existential: Would the much-maligned virtual-real trope finally be reduced to an urban myth sometime in the 22nd century, where it would be inconsequential to demarcate the ends of physical reality and the beginnings of Web-enabled augmented states? It doesn't seem surprising that at the end of the day, with the addition of each new technology to our repertoire, we are still left with the most essential and timeless of questions: *what is reality?*

Nilofar Ansher

Augmenting Expectations



Arjun Jassal

We've been recreating the world for a while now. From cave paintings, hieroglyphs, text, images, motion pictures to our ever-growing obsession of 'visualizing' information, we're constantly looking for new ways to understand, recreate and represent the world around us. Yet, there has always been one divide, of the world around us and of the medium we choose to use. The medium is a tiny part of the world and yet it attempts to map or recreate something much larger and more complicated.

But what happens when the world becomes the medium? When the world is your canvas and your screen? And that is the idea behind 'Augmented Reality', where the information isn't recreated on a model world but presented or rather, re-presented *on* the real world as you view it.

The idea in itself is quite seductive. In Charles Stross' *Accelerando* (2005 sci-fi novel), the protagonist, Manfred Macx, wears glasses that constantly pump his brain with information about the world around him. The information ranges from points of interest around his location, to searching the internet for information he wants at the moment, to even helping him *think* of ideas and concepts. The glasses are a part of Macx, they aren't just an accessory that shades his eyes from the sun.

While fiction has a tendency to lead the way to new inventions and discoveries, as of now, AR hasn't quite reached the point where it can create Macx's glasses. Instead, what we have are smartphone apps and gesture recognition systems, which add text, images and some motion graphics to what we see through the device's camera or on surfaces of what are friendly projections. It's more than plain eyesight, but it's not intelligence; it simply picks up information based on where you stand and what you're looking at or how you are moving.

How does it work?

Most AR systems work on a simple premise: They store the data you're supposed to see (images, video or text) and connect that to a location (geographic coordinates, almost like latitude and longitude) and the direction you're facing (angle between coordinates) on servers placed online (like website pages). So when you're at that location and pointing your device in a designated direction, the AR system throws the content at you. It's like having a hyperlink, not one that goes from webpage to webpage, but one that goes from *place* to web page.

That's the issue with AR, the lack of a defined purpose or a groundbreaking application at its core. Supporters will tell you how AR will help you do so many things in the *future*, while critics label it as just another media experience that can be branded and sold as advertising. Neither may be right in the coming years, but at this point, the critics have a powerful argument.

VR, virtual reality, was once just where AR is now, something that was cool; it caught everyone's attention and had massive amounts of funding. It was going to be *the future*. That didn't quite happen. Virtual worlds, one application of VR technology, reached a zenith of millions of users and zillions of words in print. Every teenager, their uncle and their favorite brand wanted to move to virtual shops on exotic virtual beaches to lead fantastic virtual lives. And then one day, they ran out of things to do, the one big break that the industry wanted never came through: cases in point, the abandoned islands of Second Life, the empty streets of Twinity, and the quick death of Lively.

As I write on and dream of AR that's what I'm afraid of. The constant stream of what AR can do and how it will change things is placing expectations in a sphere, which may yet be full of hot air. We believe AR can be useful, we think that it can have many applications and we hope it will bring in new ways of 'seeing' things. Until that happens and its fruits trickle down to the market, I'm intent to stay cautious and develop more things that look at its marketing and advertising potential. If you don't agree, build things and prove me wrong. Nothing would be better for the AR industry.

Supporters will tell you how AR will help you do so many things in the future, while critics label it as just another media experience that can be branded and sold as advertising



Augmented reality app brings dinosaurs to life at museum

A Toronto-based digital studio is putting flesh on the bones of dinosaurs and bringing the prehistoric beasts to life at the Royal Ontario Museum for a public display opening June 23.

No, this isn't "Jurassic Park" come to life. It's an augmented reality app that's been loaded onto iPads mounted in the displays at a new exhibit titled *Ultimate Dinosaurs Giants from Gondwana*. At a media preview, early visitors peered at giant fossil casts through the lens of an iPad camera and saw them transformed into life-like reptiles. The dinosaurs even look a little bit hungry, like they might suddenly turn those giant teeth towards you and take a bite.

<http://bit.ly/MMcZLz>

Digital Dualism versus Augmented Reality

Nathan Jurgenson

The power of social media to burrow dramatically into our everyday lives as well as the near ubiquity of new technologies such as mobile phones has forced us all to conceptualize the digital and the physical; the on- and off-line.

And some have a bias to see the digital and the physical as separate; what I am calling **digital dualism**. Digital dualists believe that the digital world is “virtual” and the physical world “real.” This bias motivates many of the critiques of sites like Facebook and the rest of the social web and I **fundamentally think this digital dualism is a fallacy**. Instead, I want to argue that the digital and physical are increasingly meshed, and want to call this opposite perspective that implodes atoms and bits rather than holding them conceptually separate **augmented reality**.

In a 2009 post titled “Towards Theorizing An Augmented Reality,” I discussed geo-tagging (think Foursquare or Facebook Places), street view, face recognition, the Wii controller and the fact that sites like Facebook both impact and are impacted by the physical world to argue that “digital and material realities dialectically co-construct each other.” This is opposed to the notion that the Internet is like the Matrix, where there is a “real” (Zion) that you leave when you enter the virtual space (the Matrix) -an outdated perspective as Facebook is increasingly real and our physical world increasingly digital.

I have used this perspective of augmentation to critique dualism when I see it. For instance, last year I posted a rebuttal to the digital-dualist critique of so-called “slacktivism” that claimed “real” activism is being traded for a cyber-based slacker activism. No, cyber-activism should be seen in context with physical world activism and how they interact. Taken alone, yes, much of the cyber-activism would not amount to much. But used in conjunction with offline efforts, it can be powerful. And, of course, my point is much, much easier to make with the subsequent uprisings in the Arab world that utilize both digital and physical organizing. This *augmented dissent* will be a topic for another post.

Recently, I have critiqued “cyborg anthropologist” Amber Case for her use of Turkle’s outdated term “second self” to describe our online presence. My critique was that conceptually splitting so-called “first” and “second” selves creates a “false binary” because “people are enmeshing their physical and digital selves to the point where the distinction is becoming increasingly irrelevant.” [I’ll offer my own take for what that digital presence should be called in a soon-to-come post.]

But the dualism keeps rolling in. There are the popular books that typically critique social media from the digital dualist perspective. Besides Turkle’s *Alone Together*, there is Carr’s *The Shallows*, Morozov’s *The Net Delusion*, Bauerlein’s *The Dumbest Generation*, Keen’s *The Cult of the Amateur*, Siegel’s *Against the Machine*, Lanier’s *You Are Not a Gadget*, and the list goes on (we can even include the implicit argument in the 2010 blockbuster movie *The Social Network*). All of these argue that the problem with social media is that people are trading the rich, physical and real nature of face-to face contact for the digital, virtual and trivial quality of Facebook. The critique stems from the systematic bias to see the digital and physical as separate; often as a zero-sum tradeoff where time and energy spent on one subtracts from the other. **This is digital dualism par excellence. And it is a fallacy.**

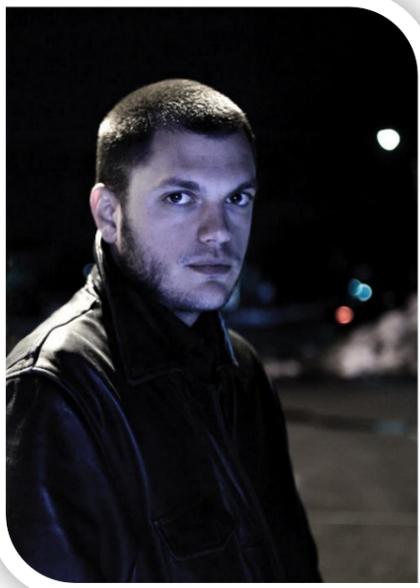
I am proposing an alternative view that states that our reality is both technological and organic, both digital and physical, all at once. We are not crossing in and out of separate digital and physical realities, ala *The Matrix*, but instead live in one reality, one that is augmented by atoms and bits. And our selves are not separated across these two spheres as some dualistic “first” and “second” self, but is instead an augmented self. A Haraway-like cyborg self comprised of a physical body as well as our digital Profile, acting in constant dialogue. Our Facebook profiles reflect who we know and what we do offline, and our offline lives are impacted by what happens on Facebook (e.g., how we might change our behaviors in order to create a more ideal documentation).

Most importantly, research demonstrates what social media users already know: we are not trading one reality for another at all, but, instead, **using sites like Facebook and others actually increase offline interaction**. This is not zero-sum dualism. As the famous *Network Society* theorist Manuel Castells stated earlier this month,

Nobody who is on social networks everyday (and this is true for some 700 million of the 1,200 million social network users) is still the same person. It’s an online/offline interaction, not an esoteric virtual world.

None of this is to say that social media and the web should not be critiqued. Indeed, it should be, and I hope to do that work myself. However, critiques of social media should begin with the idea of augmented reality. **Is a reality augmented by digitality a good thing?** My job with this post is not to answer that question, but to help make it possible.

This post first appeared in *Cyborgology* blog, on 24 February 2011. Read it here: <http://bit.ly/hIG5x6>



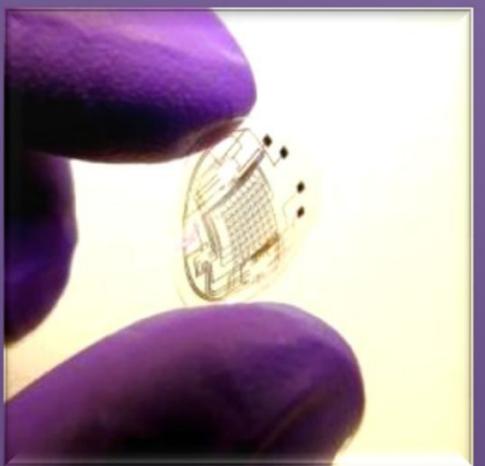
My critique stems from the systematic bias to see the digital and physical as separate; often as a zero-sum tradeoff where time and energy spent on one subtracts from the other

WEB TRAILS



Google Glass to Offer Text Message Alert to People with Hearing Impairment

Google recently released a patent and described in depth their plans for creating new features inside the Google Glasses specifically to aid the hearing impaired when they're out in the world. One of the features is that the glasses will actually alert the user with a text message when loud noises or potential dangers are approaching. It's all part of a 360 degree sensor system that will protect the user from something they wouldn't have been aware of otherwise. <http://bit.ly/L184HN>



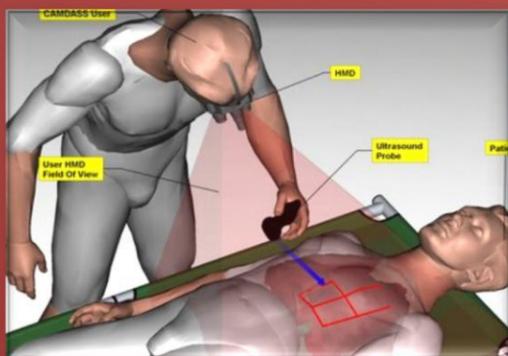
Superhuman Vision may be on the Horizon

Contact lenses have traditionally been engineered to help the visually impaired see the world around them more clearly. But why not super vision? Why not a lens that could superimpose holographic driving control panels over a pilot's otherwise normal view? Enable Web surfing on the go? Engineers at the University of Washington have been asking just that as they manufacture first-gen versions of the bionic eye in the form of contact lenses with an imprinted electronic circuit and lights. <http://cnet.co/mGD58>



A Look Inside Leap Motion, the 3D Gesture Control that's like Kinect on Steroids

Leap Motion's not the household name Kinect is, but it should be — the company's motion-tracking system is more powerful, more accurate, smaller, cheaper, and just more impressive. The Leap uses a number of camera sensors to map out a workspace of sorts — it's a 3D space in which you operate as you normally would, with almost none of the Kinect's angle and distance restrictions. <http://vrge.co/KKMEIO>



Augmented Reality Promises Astronauts Instant Medical Knowhow

A new augmented reality unit developed by ESA can provide just-in-time medical expertise to astronauts. All they need to do is put on a head-mounted display for 3D guidance in diagnosing problems or even performing surgery. <http://bit.ly/Mt3Ayn>



A Surgical Implant for Seeing Colours Through Sound

A colorblind European artist who has gained fame as a cyborg who "sees" colors through sound is planning to have an operation that will fuse his listening device to his skull. Neil Harbisson, 29, was born with a rare condition called achromatopsia, which limits his color perception to black and white. In 2004, working with friends, he began to wear a series of devices that translated color into sound. <http://nyti.ms/MDt63q>

Picasso Inside a Robot? Why Not!

Frank Odongkara

The human arm is the most developed mechanical system in the human body, perhaps. We use it to type, paint and make machines which print better than us in the end. I guess we can all agree that no human can paint a picture as detailed as a 2MP camera and a printer can do it in two minutes. Yes, there is a reason to be scared if you are a painter. This is no threat but neither is it a bluff; I guess this is a hint that you may want to start looking out for the cyborgOS 1.0 and the iHumanArm hardware.

Robotics is one of those engineering fields that has been given much less recognition and support over time. This trend is however changing and robots are becoming more complex and popular every day. Their application in art is also increasingly gaining recognition. What's more, there are even international competitions and exhibitions such as Artbot. Then we have *xirrou*, a 2-component wall styling robot, which can individually print on walls and ceilings..

Not enough reason to be alarmed? Well how about Augmented Reality (AR) kicking new paint into the robots. Let us consider this: you are reading a novel about some adventure in the open semi-arid Savannah grasslands of Northern Uganda when Francaustain (a future painting robot; no relations with Frankenstein's monster) starts splashing stuff all over the wall (which in reality may be a screen). A few sentences later and there is the beautiful scenery before you. Not amused? How about this; you are watching the American Revolution unfold and would like an abstract painting representation of it when you notice that is just what Francaustain has been doing in the corner. Not only will robots be able to paint, they shall also be able to take 3D AR out of the screen and place it in front of you. The possibilities are limitless when we consider that robotics has ventured into music, and eventually will foray into other activities.

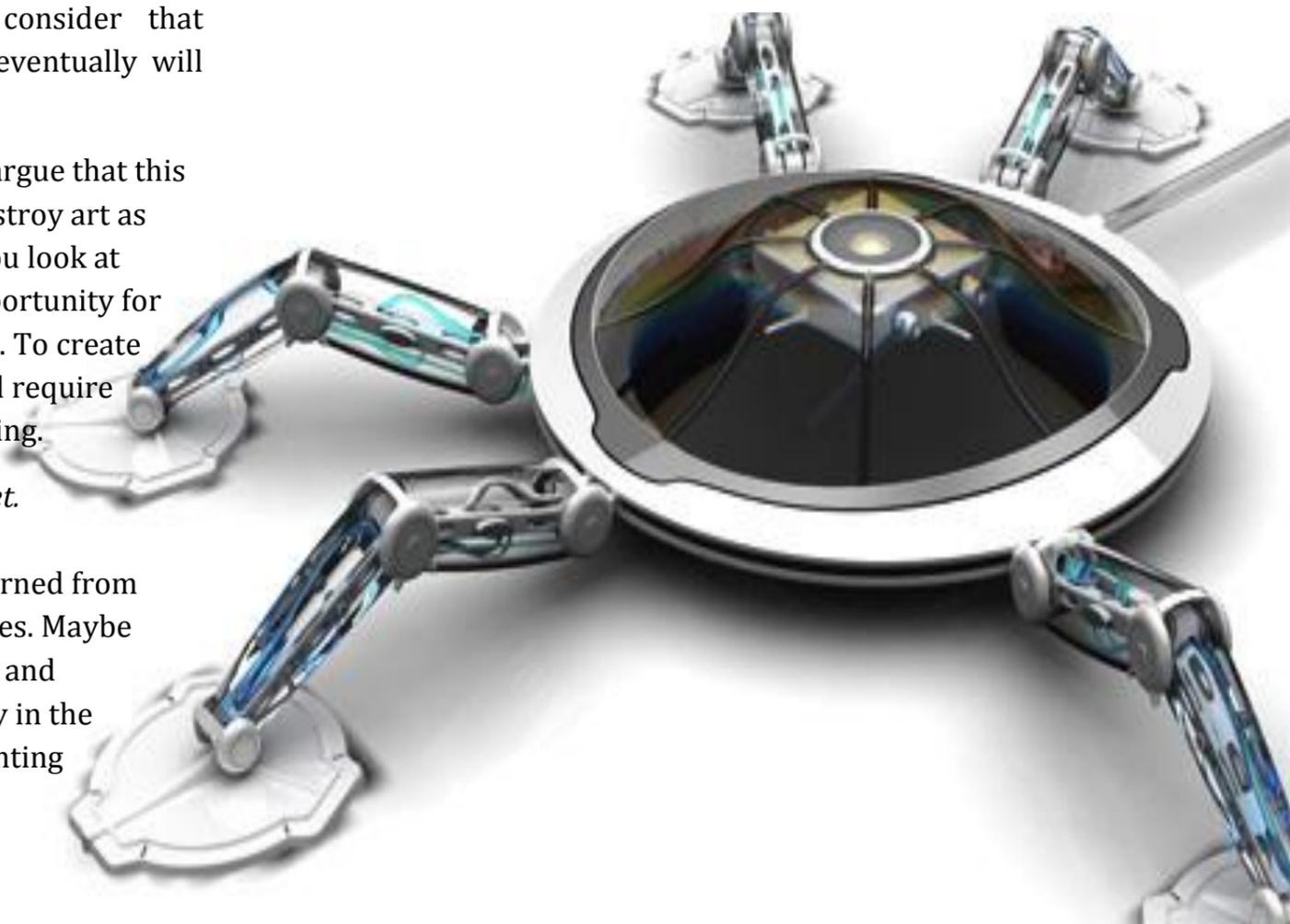
Some members of the art fraternity may argue that this is a negative impact and one that shall destroy art as humans understand it. However, when you look at things more positively, there is a new opportunity for artists to work in technology laboratories. To create a robot that draws dynamic patterns shall require artificial learning by observation, not coding.

Even then, we can't have creative robots yet.

Maybe we shall have robots that have learned from particular artists and can mimic their styles. Maybe the CyborgOS 2.0 shall come with Picasso and Van Gogh modules pre-installed. Someday in the future, humans and robots will be augmenting each other's realities.



Not only will robots be able to paint, they shall also be able to take 3D AR out of the screen and place it in front of you. The possibilities are limitless when we consider that robotics has ventured into music as well





Hi, Robot: A new fund doubles down on our automated future

Dmitry Grishin – one of "Russia's Mark Zuckerbergs" – made his fortune as the CEO of the Internet communications platform Mail.ru. The service is one of the most popular websites in Russia, a communications portal that might resemble AOL, had AOL also invented Facebook. His leadership of Mail.ru has made Grishin, at 33, one of Russia's most successful – and richest – social web entrepreneurs.

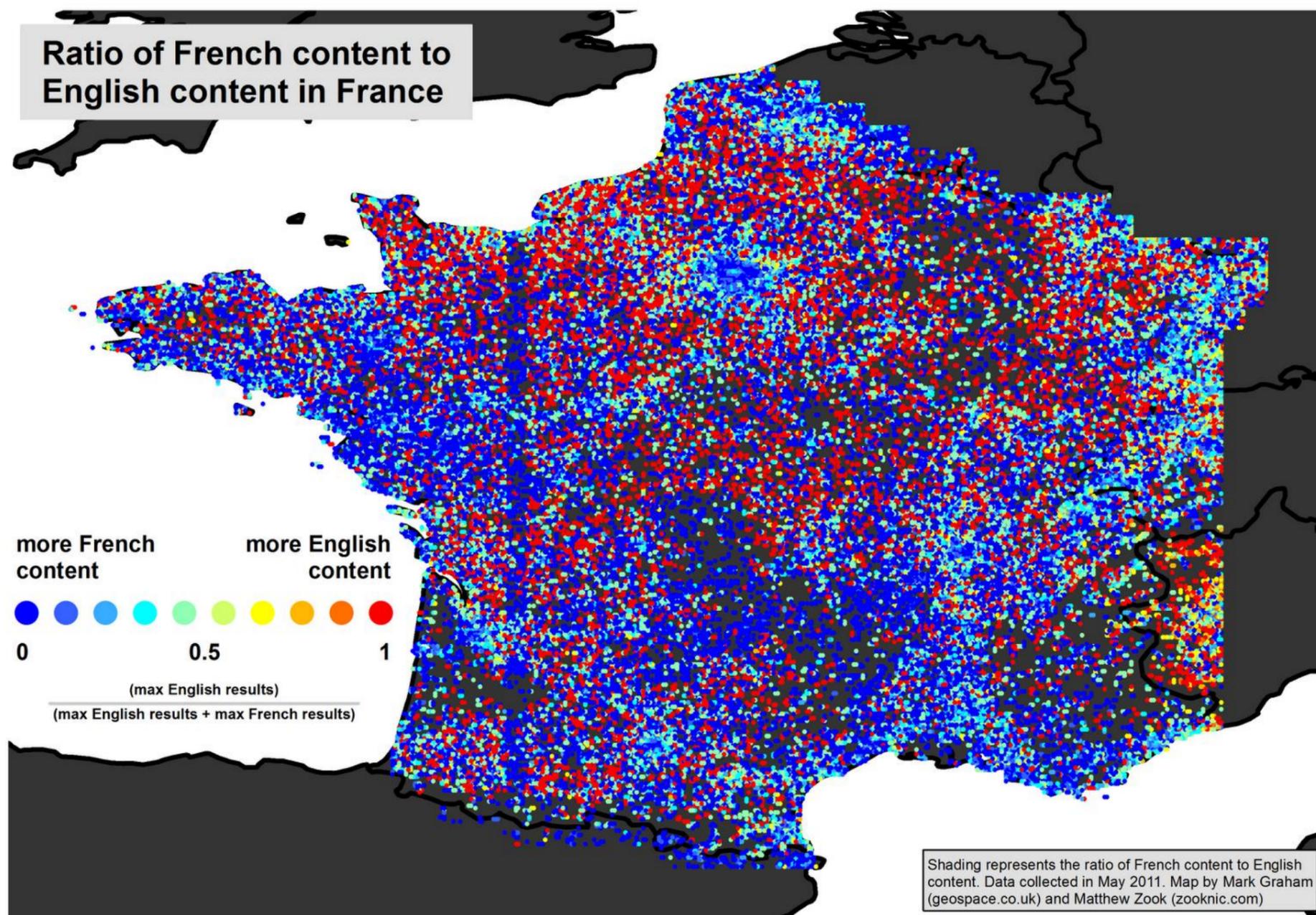
Now, though, Grishin is betting on a different kind of future, based on a network not of people, but of ... anti-people. Grishin thinks the future belongs to **robotics**. And he's backing up that belief with a hefty chunk of his own considerable fortune. Grishin just announced the launch of Grishin Robotics, which will be the first global investment company focused exclusively on funding personal robotics. Grishin is investing USD25 million in the company, which will be based in New York City. It will be a venture fund, essentially, focused on robot innovation – with an overall mission of promoting the work of companies and inventors who are helping to build us a **cyborgian** future.

<http://bit.ly/M0aKp5>



Augmented Realities and Uneven Geographies: Exploring the Geo-linguistic Contours of the Web

Mark Graham's paper (co-authored with Matt Zook) is concerned with the ways in which augmented inclusions and exclusions, visibilities and invisibilities will shape the way that places become defined, imagined, and experienced



The way in which understandings of places are constructed through depictions, names and representations have long defined the meanings associated with our material environments (e.g. Basso, 1996; Creswell, 2009). Fixings of place in names, stories, songs, books, newspapers, videos, and other cultural media matter because those stabilizations, in turn, become the basis for how we understand, produce, reproduce, enact and re-enact the places and cities that we live in. Never before have so many representations of the meaning of places – either deliberate commentaries or offhand by-products of daily life – been so readily available for consumption and contestation. Due to the overwhelming wealth of depictions, however, there is a simultaneous process of software (e.g. PageRank) and social-sorting systems (e.g. online social networks) that prioritize and present a selective slice of the multitude of representations of places (Graham, 2005; Zook and Graham, 2007b).

As a result, places are increasingly defined by dense and complex layers of representation that are created, accessed and filtered via digital technologies, and often opaque lines of coded algorithms (Thrift and French, 2002; Kitchin and Dodge, 2011; Graham, 2010). This digital dimension to place is layered throughout our urban landscapes as geo-coded references that trace economic, social, and political experiences of the city. These digital layers are invisible to

the naked eye, but form a central component of the augmentations and mediations of place enabled by hundreds of millions of mobile devices, computers, and other digital technologies (Graham, 2011a). In this paper, we take up the term “augmented reality” to refer to the “indeterminate, unstable, context dependent and multiple realities brought into being through the subjective coming-togethers in time and space of material and virtual experience, as illustrated in the opening passage. In other words: augmented reality is the material/virtual nexus mediated through technology, information, and code and enacted in specific and individualised space/time configurations” (Graham et al. 2012).

Beyond simply accessing and using these representations about place, individuals are actively adding, editing and contesting this information. But far from uniform and ubiquitous, these digital dimensions of places are fractured along a number of axes such as location, language and social networks with correspondingly splintered representations customized to individuals’ unique set of abilities and backgrounds. As such, the resulting constructions of place are complex and far from uniform across space, class or culture.

This paper analyzes how these fractures differ across space and language to both highlight the differences and initiate the process of explaining the factors behind them. This paper has been accepted to *Environment and Planning*. You can read the paper online: <http://bit.ly/GTOMAn>



Graffiti Archaeology

This is a project devoted to the study of **graffiti-covered walls** as they change over time. The core of the project is a *time lapse collage*, made of photos of graffiti taken at the same location by many different photographers over a span of several years. The photos were taken in San Francisco, New York, Los Angeles and other cities, over a time span from the late 1990's to the present. Using the grafarc explorer, you can visit some classic graffiti spots, see what they looked like in the past, and explore how they have changed over the years. <http://grafarc.org>



Archaeologists are increasingly being trained in **geospatial** techniques. After the United States invaded Iraq in 2003, archaeologist Elizabeth Stone, who teaches at Stony Brook University, wanted to quantify anecdotal information about the pillaging of the "cradle of civilization." Funded by a variety of sources, she obtained satellite images of some 1,800 sites in southern Iraq taken before the invasion. By studying before and after shots, she was able to **identify looting patterns** that revealed what was being taken and from where. Google Earth for tracking looting could be an open-source project. People could add information and photos, monitor particular areas or issue alerts as images reveal possible pillaging. Such a project also could be combined with a comparative pixel analysis of remote sensing images of pitted landscapes.

<http://bit.ly/JVRoD6>



Tessa Morrison and Ning Gu at Australia's University of Newcastle, are exploring ways to improve the **visualization of historical buildings** and bringing alive heritage. "AR has a potential of making history real: projecting a digital image onto a real building, and being able to walk around the building with the historical image walking with you. That is an incredible way of presenting a city and its lost architecture, giving people an idea of a revitalised city," says Morrison. <http://bit.ly/hkGhzb>

Has Anyone Seen Sara...?

Relationships with real people in augmented reality/ubiquitous computing space | **Anand Jha**

Here is a scene that is straight out of a research study conducted circa 1991 at Xerox PARC labs that involved remote collaboration tools and augmented reality. A person gets up from his seat and opens the door to a hallway and yells to a gallery of virtual people, "Has anyone seen Sara?" One could co-work with people not present in the *same physical space*.

It didn't take long for film makers to latch on to the idea of mediated reality: teleportation, inter-galactic battles and Beaming Scotty's became de rigueur in movies. Reality, however, was much slower in catching up; VoIP, video chats and virtual presence software and devices took more than 20 years to go mainstream. Though these technologies are commonplace for millions of people today, it comes bundled with limited user experience (voice/2D) and a much lesser immersive content context than that of a video game. You might believe that science fiction is still one step ahead and it might take us another couple of decades to play catch-up.

However, we know for sure that technological ecosystems are accelerating at a faster pace and have reached a threshold maturity where one can expect compelling experiences to be deployed well within the next decade. Enough material is already available on Augmented Reality and its juxtaposition over the real plane. From interactive media games to holo-benches for automotive modeling, and robotic hands for product assembly to Kinect hacks for medical image analysis during operations: one would find multiple applications in specialized areas already leveraging this thought process. With Google Glass, one is seeing AR stepping into our generic lives, on streets, cafes, offices and classrooms.

If you shift your perception from admiring AR as a technological marvel, you may accidentally stumble into a less discussed space – the apprehensions of ubiquitous mixed reality. While we create and consume technology, it also creates and consumes us. As the tools of creating technology have become efficient and easier to use, we are interfacing more with social technologies and less with people. Decreasing attention spans have resulted in shorter engagements with family and friends; experiences are shallow and information consumption, mechanical. This has resulted in shrinking social spaces and atomic social structures that have a short life span. We see people flitting in and out of social ties as they would from game parlors or chat rooms.

Cut to a scene from *2046*, Wong Kar Wai's celebrated tech-flick, where the protagonist - a lonely man in a futuristic world - decides to make a long train journey to bring back the memory of a loved one and instead falls in love with a robot companion who does not have the mandate to emote. When you evaluate companionship paradigms like these, it seems as if passive social needs are being distributed over the virtual network. Imagine a social network with real profiles being mixed with virtual profiles that are engineered to appear 'real' or human. Within that space, how would you possibly differentiate between the interactions you have with a bot and a person?

At an abstract level, the difference between the biologically engineered (and socially conditioned human) and the mechanically engineered clones bots (as in *2046*) is that of emotional intelligence (which is part subset of logical intelligence, assuming an emotional behavior is an aggregate of multiple atomic logical statements) which, to a great extent, is an achievable goal. Assuming that is possible, would a human still need companionship, progeny and other social ties? What would become of social institutions such as family, community and marriage? Will it also affect biological processes and functions like reproduction and aging? Above all, would it also influence the idea of gender and the need to manipulate it, now that its fundamental purpose is lost?

As we have seen, fiction has a relentless habit of preceding reality. We are already taking small but incremental steps towards this end; virtual assistants like Siri and scripted virtual escorts are already part of the fabric of social communication. The long hours that we spend immersed in gaming environments could very well be our only homes in the future. The advent of new inventions and technologies has attracted prophetic skeptics into admissions of doom or glory that futuristic technologies would unleash. But with AR, it is not really a piece of technology or an end product, rather it's the convergence of many of these ideas and simulations towards the central idea of embedding human-like intelligence and human like behavior in man-made objects.

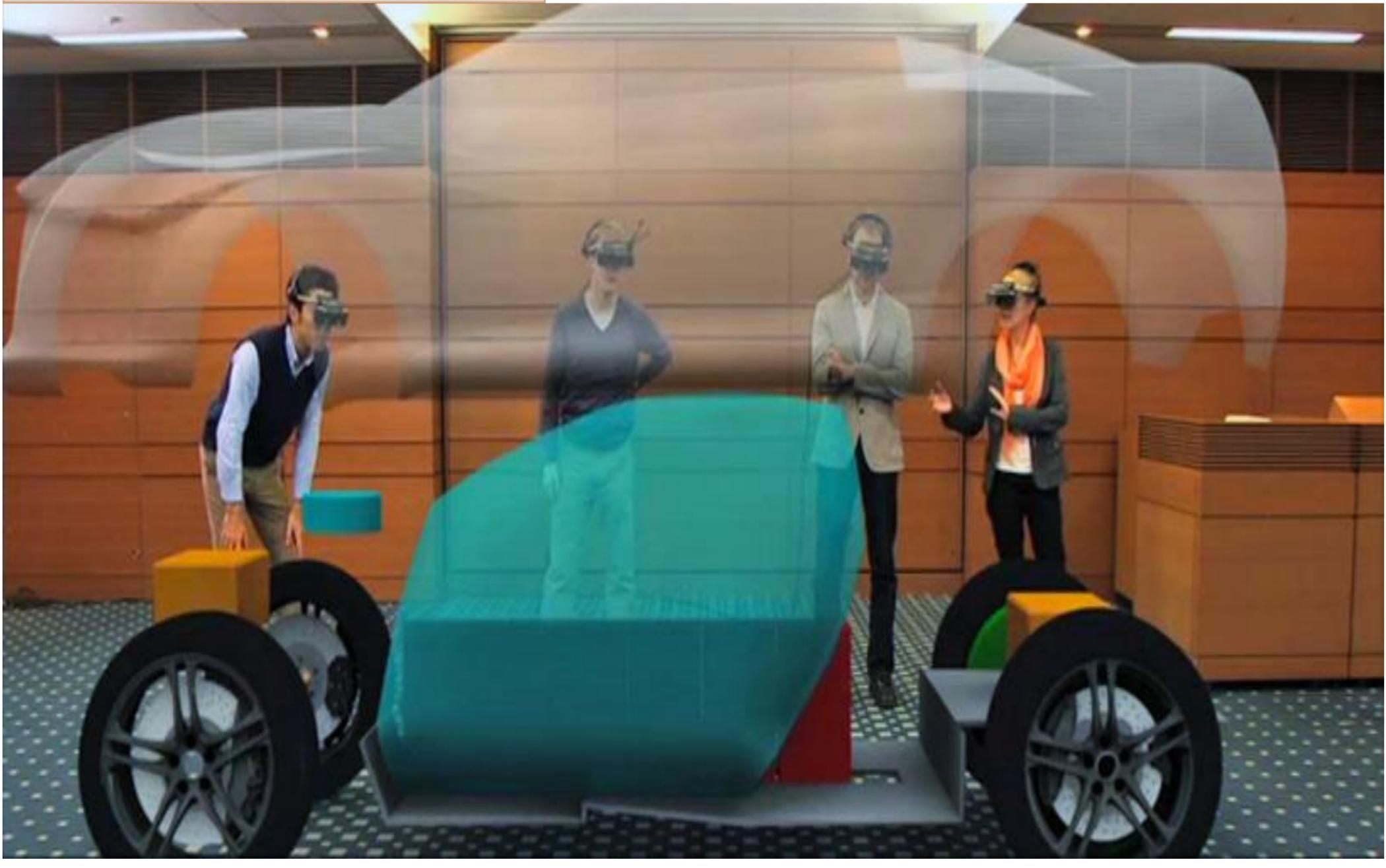
Across the gallery, people would have seen Sara, but they would not be able to say without a smidgen of doubt if she was human or a mashup of code, plastic and metal.



Canon MR Augmented Reality

The new 'MR (mixed reality) system' by canon enables the viewing of full-scale, 3-dimensional CGI in real environments. The full-vision headset donned by users integrates not only video cameras and displays but also a positional and directional sensor that ensure that the virtual image is seen at the proper perspective relative to the viewer. canon refers to the system as 'mixed reality' to contrast it from a simple superimposing of imagery onto the real environment, since the digital imagery is explorable in realistic 3D thanks to these sensors. 'Canon MR' is designed particularly for use in the industrial design and manufacturing industries. virtual spaces and interior designs can be visualized in reality; products can designed and tweaked by teams during the development process; and finished objects can be explored by potential clients firsthand.

<http://bit.ly/Pr1Y6g>



As Real As It Gets

While we are busy augmenting our physical realities with layers of information, Divya Srivastava talks about the non-duality of the space that the world has divided into virtual and real | [Divya Srivastava](#)



I am not sure that I can call the Internet a 'virtual' world, at least not in the way it is connotated by the common man – as a non-existent space or an unreal world. I am a real person and even when I am online, I would like to be considered as someone with a presence

When I was in junior college, I fractured my leg and was confined to the bed for more than three months. It was at that time of severe boredom and extreme loneliness that I stumbled upon the Internet. I have never labelled myself as 'tech-savvy'; earlier, my browsing was limited to checking emails and using MSN or Yahoo Messenger. Desperately looking for ways to maintain my sanity and social life following the accident, I began accessing the Internet more often and soon stumbled upon the world of online discussion-forums and groups. I could while away time chatting with people from around the world and in the process, learn about different cultures, viewpoints and way of life.

I have always been fond of writing and it was an online friend, who, one day, introduced me to the world of blogging. Blogging not only gave me a platform to share my thoughts with others but it also gave me a chance to see what others had to say about them. Soon, I became a regular visitor of this online virtual world and some of the people I met there, I ended up meeting in real-life as well.

I am not sure that I can call the Internet a 'virtual' world, at least not in the way it is connotated by the common man – as a non-existent space or an unreal world. I am a real person and even when I am online, I would like to be considered as someone with a presence, whether it's material or a transmutation of the senses. As I write this, I am reminded of Jacques Derrida and his take on multiple realities. Derrida had questioned the very notion of what is reality. According to him, the very history of Western thought was based on opposition: good v/s evil, man v/s woman, mind v/s matter, black v/s white. Moreover, these oppositions were hierarchical with the second term being a corruption of the first. But how appropriate are these oppositions? The opposite of good, in my opinion, is 'not good' – if we cannot define a person as being 'good', it is not necessary that the person can be labeled as 'evil'. The opposite of evil is, therefore, 'not evil' – a person may not be evil but he need not be good either! In the same manner, I feel it is wrong, no, 'incorrect' to juxtapose the real world against the virtual world.

For argument's sake, I am going to use the terms 'real world' and 'virtual world' to explore the various facets of these two different realities. The so-called virtual world is a society of its own, harboring a wide web of social interactions and relationships. Just like we are surrounded by all kinds of people in the real world, there are people of various backgrounds inhabiting the virtual world as well. In the real world, we meet people, exchange ideas, spend time together, talk about the incidents of our daily life...We do that in the virtual world as well. With lack of playgrounds in the urban centres of our country, children and adolescents restrict themselves to playing indoor games and today, online gaming is a popular phenomenon with more and more people having access to gaming consoles like XBOX 360, Playstation 3 and Wii.

In the real world, we all try garnering contacts to get work done, look out for jobs or get any kind of help; the virtual world is no different with people making use of social networking sites like Facebook, Twitter, LinkedIn and many more to gather more human capital in the name of friends, followers and business contacts. People exercise their Right to Freedom of Speech and Expression in the real world by saying what they feel like, face to face. They do the same online on different platforms and are able to reach out to a wider audience. Just as there are certain norms and values in the real world, which people are expected to follow, netizens are also expected to adhere to a certain code of conduct. Exactly how different is the real world from the virtual world?

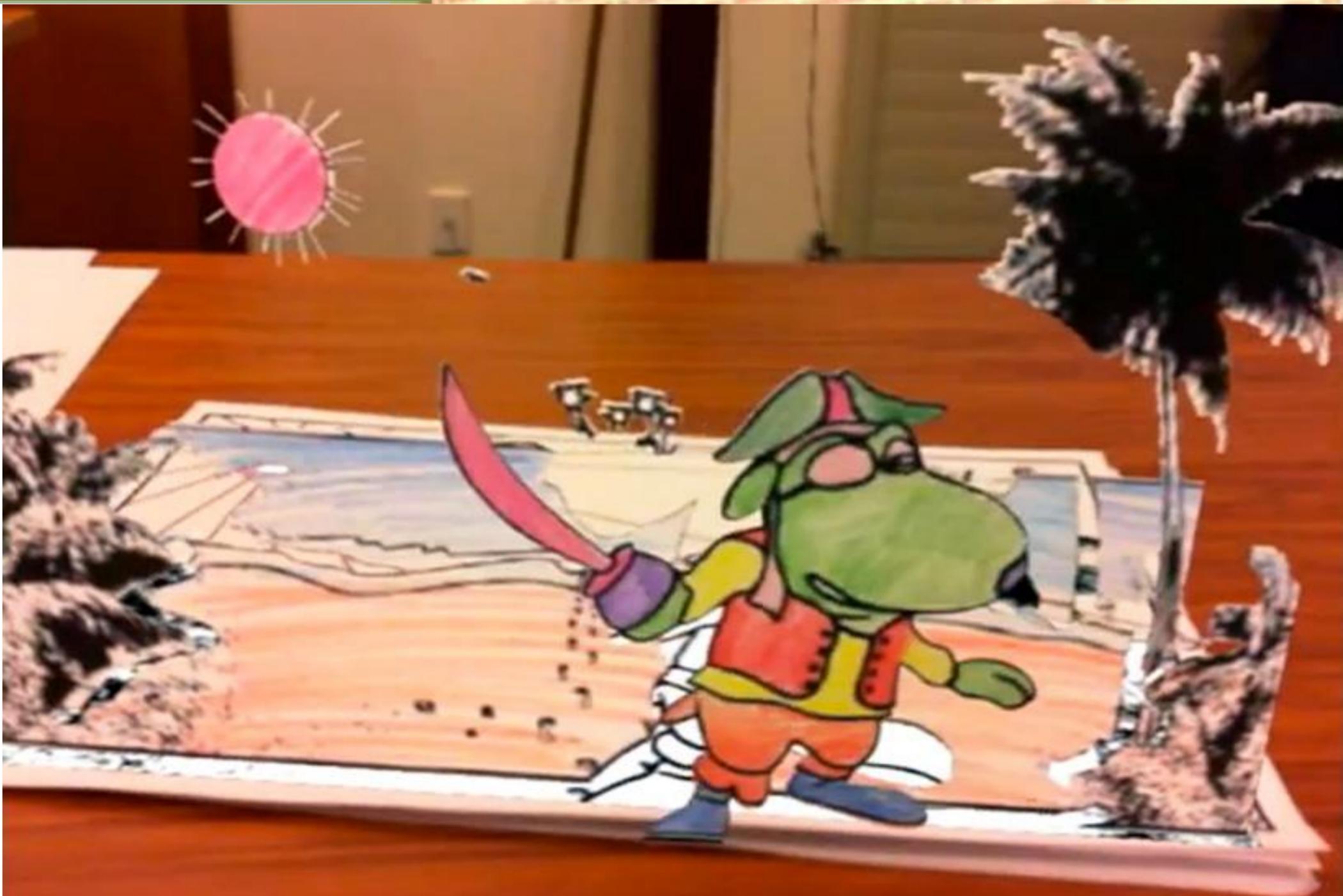
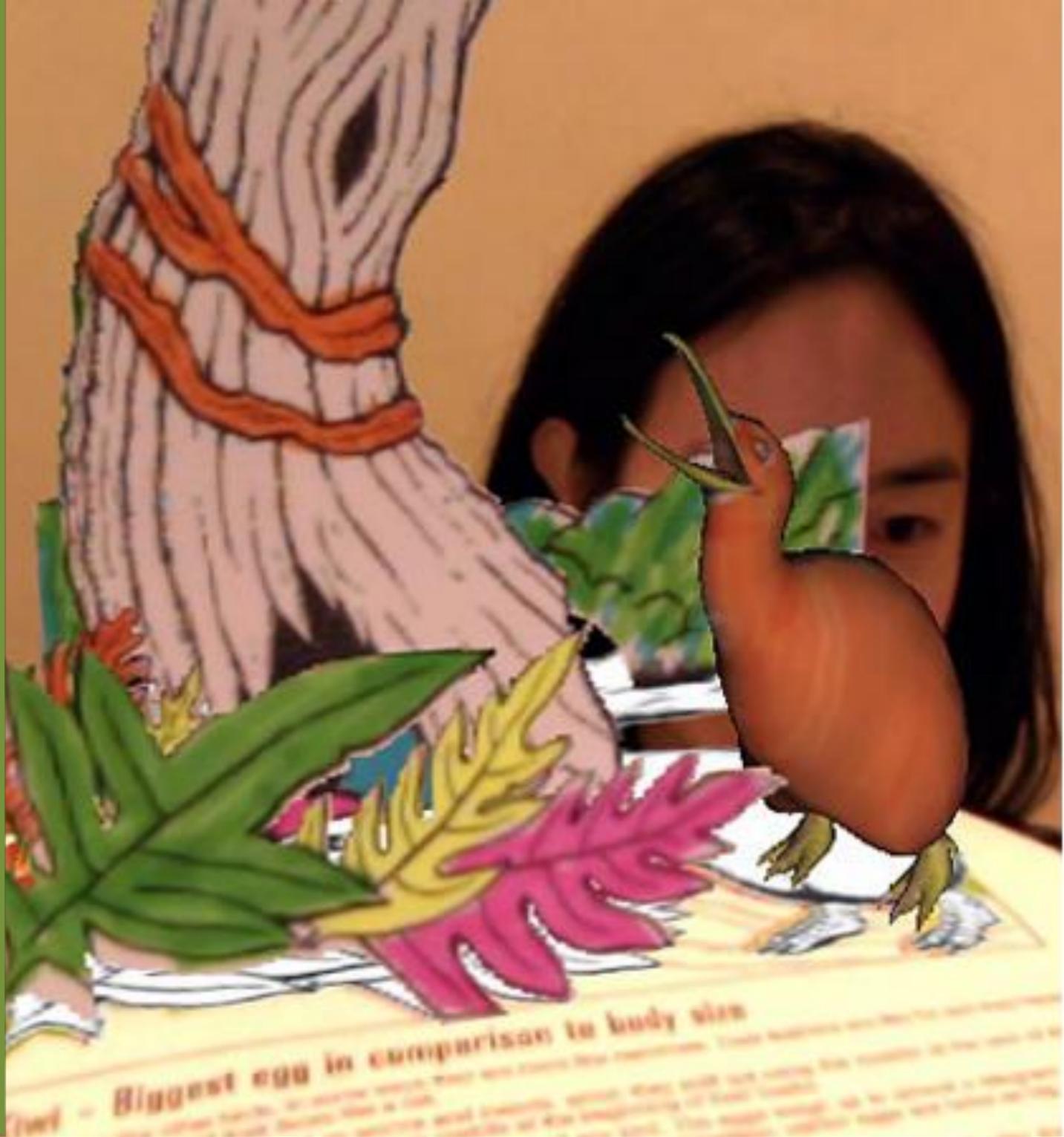
I am a person with various identities – I am a woman, a counselor, a resident of Mumbai city – there are so many things that define me. I have many relationships; to name a few - I am a sister, friend and daughter. We all have stories to share about how we met a particular person. We meet people at bookstores, in classrooms, at work. Similarly, we meet people online at different spaces. Why is it that only the section of people who we met online get labeled as 'virtual friends'? Isn't our friendship with them as real to us as our other relationships? Do all 'online friends' have no significance at all in our daily, everyday life? Haven't we at some point of the day or the other - say, on our way to work - thought about a particular friend and what he is up to even if he is someone we know only in the virtual space. Personally, I would not like to have a non-real existence in the life of another person. I do not like being thought of as a virtual entity. I am no ghost who just lurks around in the online spaces from time to time! Why then, would I deny somebody else a real place in my life?

So, is there really a distinction between the virtual world and the real one? Well, not for me, at least!

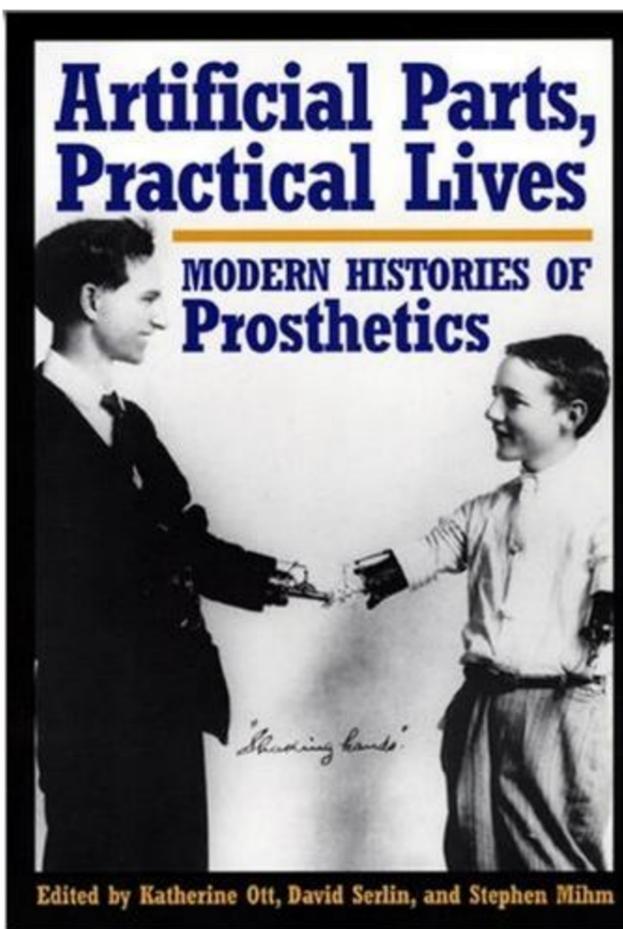
colAR colouring book

developed by the human interface technology lab new zealand (HITlabNZ), 'colAR' is a computer program that transforms colouring book pages into animated 3D models. The project features a series of mini-applications, each dedicated to a particular colouring book whose printable pages are downloaded alongside the program. children and other users colour in the pages normally, but can then scan their work with a web camera. Upon focusing in on a recognizable page, the program features an animated version of the coloured-in characters onscreen. the 3D scene can be rotated to be viewed from different angles.

<http://bit.ly/HfeZ0H>



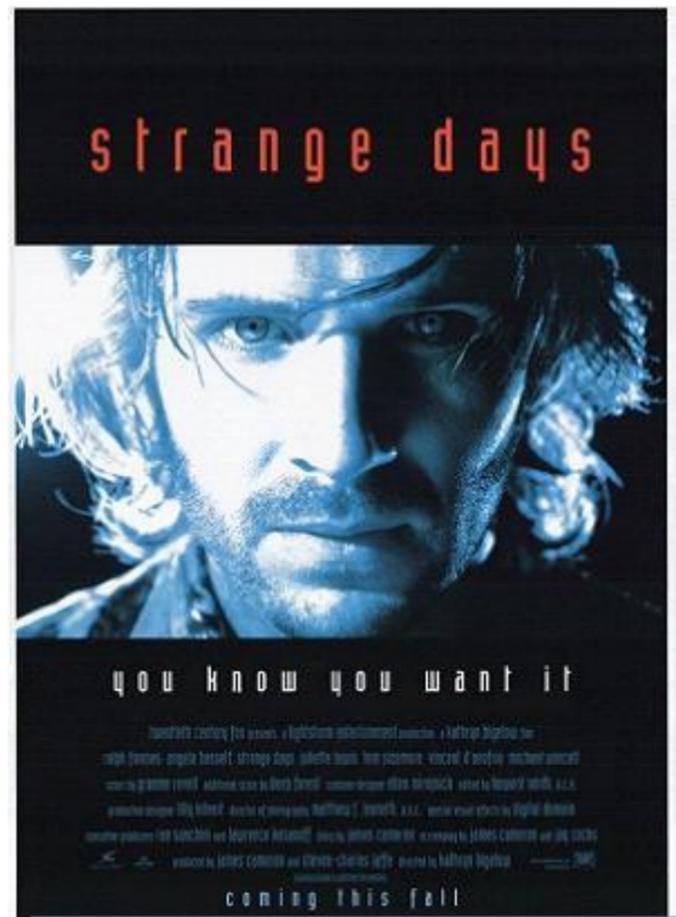
EDITOR RECOMMENDS



Book | Artificial Parts, Practical Lives: Modern Histories of Prosthetics

NYU Press | 2002

From the wooden teeth of George Washington to the Bly prosthesis, popular in the 1860s and boasting easy uniform motions of the limb, to today's lifelike approximations, prosthetic devices reveal the extent to which the evolution and design of technologies of the body are intertwined with both the practical and subjective needs of human beings. The peculiar history of prosthetic devices sheds light on the relationship between technological change and the civilizing process of modernity, and analyzes the concrete materials of prosthetics which carry with them ideologies of body, ideals, body politics, and culture. Simultaneously critiquing, historicizing, and theorizing prosthetics, **Artificial Parts, Practical Lives** lays out a balanced and complex picture of its subject, neither vilifying nor celebrating the merger of flesh and machine.



Film | Strange Days

Director: Kathryn Bigelow | **Writers:** James Cameron & Jay Cocks

Genre: Science Fiction | **Released:** 1995

Runtime: 2 hours 25 minutes

Set in Los Angeles two days before the end of 1999, *Strange Days* introduces us to Lenny Nero (Ralph Fiennes), an ex-cop turned sleazy hustler who hawks the newest underground thrill on the black market: a "squid," a headpiece that allows one to transmit digital recordings of other people's thoughts, feelings, and memories into their brain; as Lenny describes it, "this is real life, pure and uncut, straight from the cerebral cortex." Even though it's illegal to buy or own these machines, their availability has created a thriving black market for disks to run in them. What follows is a murder mystery.



TV series | Dennō Coil

Dennō Coil is a Japanese science fiction anime television series depicting a near future where semi-immersive augmented reality (AR) technology has just begun to enter the mainstream. The series takes place in the fictional city of Daikoku, a hotbed of AR development with an emerging city-wide virtual infrastructure. It follows a group of children as they use AR glasses to unravel the mysteries of the half real, half Internet city, using a variety of illegal software tools, techniques, and virtual pets to manipulate the digital landscape.

Telecast in 2007 | Available as DVD

App | Wikitude World Browser for Android

If you have an online encyclopaedia on your desktop and mobile phones, you also have one that shares information in augmented reality: featuring the Wikitude World Browser for your Android device. This app lets you view additional information about places by just looking at them on your phone's screen. If you are looking for a place to stay or you don't know which restaurant to eat at, just open the Wikitude app and scan your surroundings. You will see augmented reality content right on your phone's screen.

Download the app: <http://bit.ly/zYu05K>



THE WORLD SEEN THROUGH GLASS



Nilofar Shamim Ansher

Anyone want to discuss about Google Glasses and "bio-monitoring"? What I understand as bio-monitoring = a state of pervasive surveillance of the Body (body rhythms, habits, activities) where the state subject puts himself under surveillance without State or institutional coercion #MakeSense?

Like · Comment · Unfollow Post · June 13 at 9:12pm



Shobha Vadrevu It certainly does seem like yet another act in a Foucauldian drama. But just to play devil's advocate, what if we were to look at it through the lens of Giddens's reflexive project of the self? So yes, surveillance is certainly one aspect of the bio-monitoring exercise, but perhaps the other side of it (and what makes it seem worthwhile despite this risk) is that the data feeds back into the individual's decision-making process and ongoing identity construction. Giddens disagrees with Foucault in the equation of the body with agency, arguing instead that bodily discipline is intrinsic to the competent social agent. Of course, he wasn't talking about Google Glasses, but I am just wondering if this particular technology, like any other, deepens the project of the reflexive self even as it increases the sense of surveillance. One may not be possible without the other in today's world.

June 15 at 6:34am · Unlike · 1



Nilofar Shamim Ansher I guess I chose to look at the self-reflexive narrative as plain old introspection. I am not too sure that when we externalize the self through codeable data sets, where in Facebook, Google and Web 2.0 constrain the way that data is presented and re-represented, that the process remains organic anymore? The constantly evolving narrative begins resembling a Game (with spatial and temporal rules of externalizing data). In effect, they control how, when, where, through which medium we engage in constructing our narrative. Perhaps I have a romanticized notion of how we construct the self, more of a natural, less-devious process than a clinical one, but on the other hand I understand that performance is exactly that - clinical and conscious. However, when I look at the Digital Native (myself), I see no scope for introspection (sifting through our own data streams). It appears as though there is a mirror in front of us, showing us what we externalize, but far from revising the notions of the self, they magnify specific performance traits and characteristics. These projects are controlled by the code. We become a code-enforced narrative. If it was the Institutions that regulated the self-narrative a few centuries ago, today it's these engineered, formatted templates that govern us. That makes me uncomfortable. <ahh, you cultural-social theorists make me have a Homer Simpson 'd'oh' moment every day! Thank you for the generosity of time and engagement!>

June 15 at 10:11am · Like · 1

Apple wants to protect your identity ... by cloning you

The electronic age has given rise to what is now known as thousands of "Little Brothers," who perform Internet surveillance by collecting information to form electronic profiles about a user not through human eyes or through the lens of a camera but through data collection. This form of Internet surveillance via data collection is often referred to as "dataveillance." <http://bit.ly/MBP1o2>

British airports now beaming holographic security agents

They've brought you presidential election coverage and promoted worldwide access to PCs, and now they're telling you to take off your belt and throw out your hairspray. Starting today, London Luton and Manchester airports will beam in images of holographic agents to prep passengers for the security line. <http://engt.co/eTvnFb>

What is a friend? A metric, commodity or a real person?

<http://huff.to/LkKTsZ>

Forget the Post-PC World. Google Glasses are Preparing for the Post-Phone World

<http://onforb.es/JVTIWX>

'Biohackers' mining their own bodies' data

In the past six decades, self-help gurus from Jack LaLanne to Werner Erhardt and Tony Robbins have coached, cajoled or bullied us into being more fit, successful and well-adjusted. But their approaches have focused on mere exercise or attitude. Asprey and a growing number of like-minded peers are taking things down to the molecular level. They're trying to "biohack" the human body - tweak its biological processes to make it run at optimum efficiency. <http://bit.ly/LC1b5d>

Apple Is Knight Rider, Google Is Terminator, Microsoft Is Minority Report

Apple, Google and Microsoft are clearly attempting to transform the traditional point-and-click experience; these companies have conceived three radically different ideas about how we will interact with our devices in the coming years. Specifically: Apple thinks that we will talk to them (Siri); Google thinks we will stare through them (Google Glasses); and Microsoft thinks we will wave our hands in front of them (Kinect). <http://huff.to/KA7Iru>

We Are All Cyborgs

The cyborg reminds us that who we are as human beings is very closely linked with the technologies we use
Nishant Shah



A cyborg is a human-
technology synthesis which
enhances our capacities to
live as human beings



If you look at any illustrated history of human civilisation, you will quickly realise that it is also a history of technology. From the discovery of fire by Homo sapiens to the contemporary homo digitalis, there is no escaping that technologies of different kinds have not only changed the way we live but also helped us realise what it means to be human. Often, we treat these technologies as external to us, thinking of them as tools that we deploy to perform a particular task. However, as our technologies become more transparent, intimate and customised, we realise that we are developing relationships with the technological devices that surround us. So, if your laptop crashes, you feel crippled. There are people who proclaim that they feel amputated without their cellphone. It is quite reasonable to feel lost without the information compass of the internet.

This relationship between human beings and technologies has been very concisely defined in the idea of a cyborg. A cyborg is a human-technology synthesis which enhances our capacities to live as human beings. While it might seem like a slightly new idea, once you realise that we constantly live with technologies and often internalise them in our bodies, it is not difficult to wrap our head around it. Think of people with pacemakers or prosthetic limbs or different implants in their bodies, who experience technologies as an integral part of their everyday life. Similarly, think of the wide range of technology apparatus that you depend on to live a “regular” human life. We have also seen iconic cyborg representations in popular movies — from the absolutely unforgettable Arnold Schwarzenegger in Terminator 2 to our very own dimpled Shah Rukh Khan as Ra.One — there has been a persistent imagining of the human being as we know it, evolving to become some sort of a super man, enhanced by advancements in digital technologies of virtual reality.

There has been a growing anxiety, almost a moral panic, about how technologies are alienating us, replacing face-time with inter-face time so that we are all growing “alone together”. There is also, across generations and users, a growing separation of those who work with technologies and those who don’t. There is much concern about the human becoming corrupt because of the ubiquitous presence of the pervasive and invasive technologies around us. In the face of these anxieties, the cyborg stands as a culturally significant and timely reminder that we, as human beings, are very closely linked with the technologies that we use. And that we need to stop thinking of technologies as merely gadgets and tools that surround us. The different objects that remind us of the presence of technology are not the same thing as technology itself. Technology is a way of thinking about things, a way of relating to the world around us. The most intrinsic forms of technologies are the ones that we don’t even recognise as a part of our innate mental makeup.

Do this simple experiment. Right now, while you are reading this, do not look at any clock or time-measuring device and guess what time it is. Chances are that you will be, give or take a few minutes, more or less accurate. Even if you are temporally challenged, you will at least know what part of the day it is, morning, afternoon, evening or night. The point is that we are absolutely and completely creatures of time. We cannot think of ourselves outside of it and even when we might be dramatically wrong about it, there is no escaping the fact that we are always thinking of ourselves and the world around us through time.

We experience our lives and our relationships in cyclical notions of the clock’s face, thinking of our actions as borrowed from the future, lived in the present, and relegated to the archives of the past. It then, must come as a bit of a shock (it certainly did to me, the first time I was made to realise it) that time is not natural. Time is a human way of measuring a passage of actions. Time is a technology which has now become such a potent metaphor of life that we have forgotten to make the separation of the human and the technological.

And thus, whether you might be a tech-savvy digital native or a byte-fearing luddite, there is no denying the idea that when it comes to technologies of time, you are already a natural born cyborg. This ability of technologies to become transparent and an inalienable part of who we are forms cyborgs. The process through which they become transparent is not easily accessible, but it does begin by an internalisation of the technology’s processes in our everyday vocabulary. So the next time you think of yourself as a system that needs to be upgraded, or unable to pay attention because you don’t have enough bandwidth, remember that you are engaging in a flirtatious relationship with the digital. And slowly, but surely, we are all turning into cyborgs, as the new technologies rearrange patterns of our life and living.

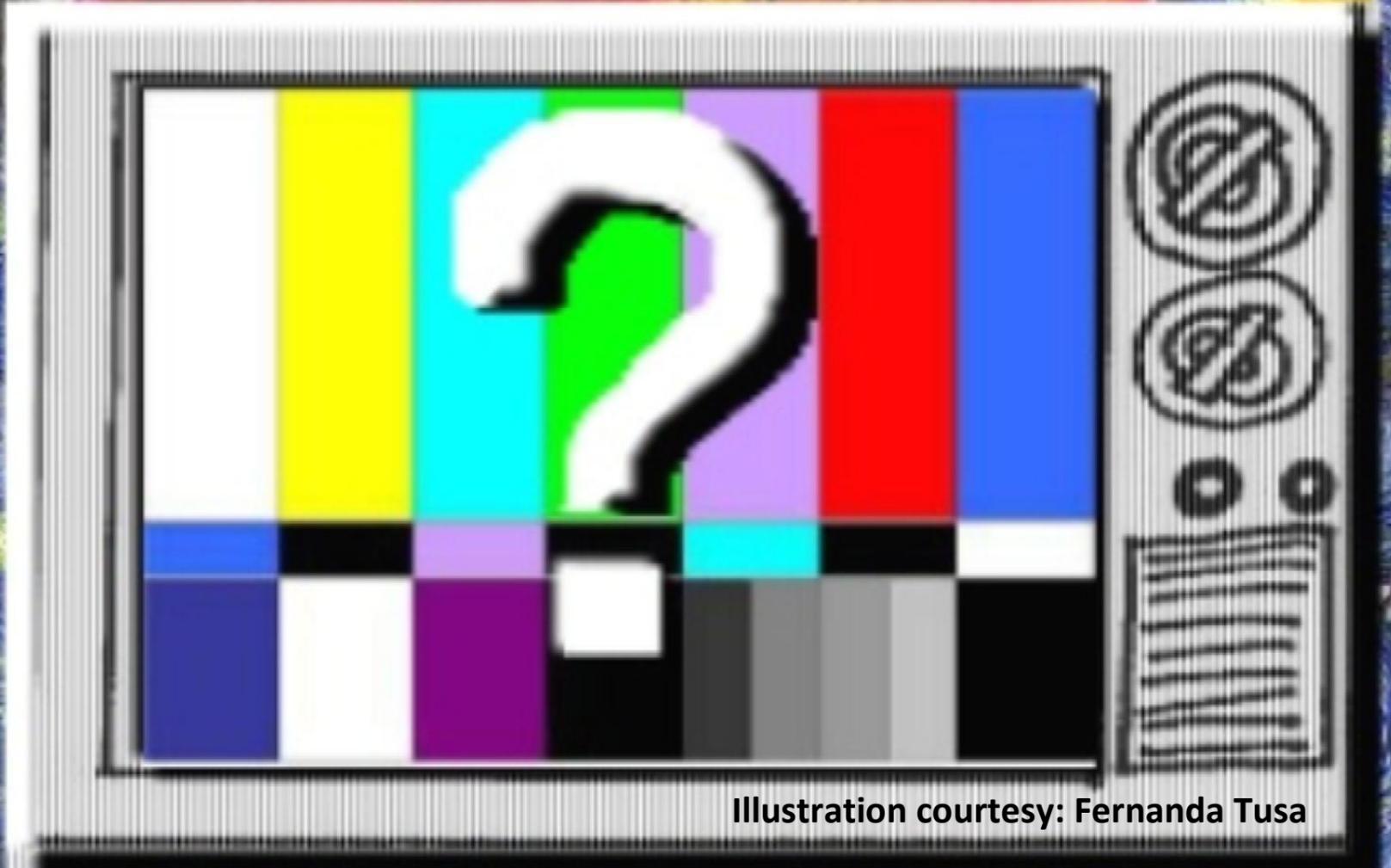


Illustration courtesy: Fernanda Tusa

CONTRIBUTORS

Mark Graham: is a Research Fellow at the Oxford Internet Institute, University of Oxford. His work centres on both Internet and Economic Geographies. One major research focus involves examining the geographies of the Internet (looking at the geographies of online content and the geographies of participation). A second broad focus deals with the role that the Internet plays in creative and information-based industries in the Global South: including his current project which explores such questions in Kenya and Rwanda. His work is published in both academic and popular outlets. He has written a series of articles for the Guardian, maintains a blog that received ¼ of a million hits last year, and has published a variety of academic articles and book chapters. His website is geospace.co.uk; blog is zerogeography.net; and twitter handle is @geoplace.

Arjun Jassal: Headant at BlueAnt Digital Intelligence, a media-technology consultancy, which helps companies understand social media by creating marketing strategies, ideas and content. BlueAnt has worked with Augmented Reality, Virtual Worlds and is currently dabbling with the Kinect.

Anand Jha: is a User Experience/HCI researcher with Siemens Research and also runs a media art collective called What/The/Funk. He is interested in demystifying technology and modelling of social structures and behaviours and lives and works out of Bangalore, India. He has a Master's degree in Industrial Design from Indian Institute of Technology Delhi.

Nathan Jurgenson: (@nathanjurgenson) is a social media theorist and a sociology graduate student at the University of Maryland, working on a dissertation about self-documentation and social media. The research is driven most fundamentally by the understanding that we increasingly live in an “augmented reality,” a perspective that views the digital and physical as enmeshed, opposed to viewing them as distinct (what he calls “digital dualism”). Nathan is also interested in and has published on how social media has triggered the rise of the digital “prosumer” (one who produces that which they consume and vice versa). For instance, Facebook users are both producers and consumers of the site. Together with [George Ritzer](#), Nathan has founded the [Prosumer Studies Research Group](#), which has [published work](#) on the topic. With PJ Rey, he has founded the [Cyborgology](#) blog and the annual [Theorizing the Web](#) conference. Finally, Nathan is also an active photographer and musician in Washington DC. His website is nathanjurgenson.com.

Frank Odongkara: is a human in the present and a cyborg from the future. He studies Computer Engineering at Makerere University and keeps up with a range of subjects (except economics and politics). He is the founder of Artorion Inc – an art and technology development company in Uganda. In moments of inspiration, he writes poems. You can find me on: Twitter: @ithinkfrank and Blogger: ithinkfrank.blogspot.com

Nishant Shah: is Director of Research, The Centre for Internet and Society, India. <http://www.cis-india.org>

Divya Srivastava: Hails from the City of Joy, Kolkata, and is now studying to be a counsellor in the City of Dreams, Mumbai, India. While she is interested in a range of subjects such as Social Sciences, Psychology, Philosophy, and Education, she is equally passionate about poetry and travel. She blogs at: <http://stardustsprinkles.blogspot.in> and her twitter handle is @ DivyaDazzles

Fernanda Tusa: is a Master of Arts in Communication and Education (Autonomous University of Barcelona, Spain) with a major in Multimedia Communication. She is a writer, teacher and journalist and currently works for Ecuadorian government (Consejo de la Judicatura). She loves to write and illustrate. Her website is: www.fernandatusa.com and Twitter handle: @Fernanda Tusa