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Editor's Note

I am pleased to have been asked to take on the editorship of the *Humanities and Technology Review* (*HTR*) and would like especially to thank Andreas Michel, former president of the Humanities and Technology Association (*HTA*), and Fred Mills, who edited the journal five years previous to me, for their gracious support in my transition period. I am also thankful for the support of the current HTA president, George Sochan, who has worked tirelessly in his initial year to increase the participation in the HTA conference and who, along with Mario Fenyo, did the copyediting for this edition of the journal.

Though the *HTR* accepts submissions from anyone working on issues of relevance to the intersection between the humanities and technology, the journal does especially encourage submissions from participants in the HTA conferences.

Each of the three articles in this 31st edition of the *HTR* stands alone. But a common thread does join two of them. Both "Virtual Reality and Mediated Immersion," by Raphael Sassower, and "The Open Source Society (and its enemies)," co-written by David Koepsell and Floris Kreiken, see some possibility of digital media facilitating more thorough participation in democratic society. Sassower offers an overview of the history of the controversy about mediation versus nonmediation, setting out from Plato's allegory of the cave, and a discussion of the view expressed by Plato that a nonmediated experience of reality is possible, and concluding roughly with Baudrillard's position that there is no reality outside of the simulacra themselves. Sassower aligns with Baudrillard, maintaining that a

nonmediated experience of reality is impossible. In the second part of his paper, Sassower looks at how the mediated immersion in gaming, pedagogy, and art, rather than interfering with good thinking and good governance, at least *has the potential* to facilitate better thinking and deeper engagement in civic life. While gaming and other forms of mediated immersion entail risks of escapism, there are also potentials for strengthening social relationships and for positive pedagogical effects. Educators are attempting to tap into those potentials in language and music instruction, and beyond. However, Sassower concludes his piece noting that whether the positive potentials will gain the upper hand in these various social institutions remains an open question.

Koepsell and Kreiken share Sassower's interest in how forms of mediation can contribute to civic life. Their general argument in "The Open Source Society (and it enemies)" is that the spirit and procedures of open source are the same as the spirit and procedures inspiring Popper's method of conjecture and refutation. Not only can these benefit society in the ways Popper highlighted, but the open source model of technology also has potentials to serve democratic institutions better than the closed propriety model. They thus do not envision experts working with the model of conjecture and refutation behind closed doors, but an open democratic process in which that model is embraced by the broader citizenry. Here they do not primarily highlight how a citizenry that uses contemporary forms of mediation can strengthen forms of social solidarity in ways that are of value for traditional political action. Rather, they imagine possibilities for the public to take an active and direct

role in shaping legislation through a form of online participatory democracy.

The final piece in this volume examines a different issue altogether, focusing on how technologies influence our views of the human body. In "Bond of Knowledge: Reading Bond with Benjamin," Keren Omry explores specifically how the depictions of the body in the recent Daniel Craig Bond films, *Casino Royale* and *Quantum of Solace*, reflect a crisis rooted in contemporary technologies in how we see humanity and society, and more specifically ourselves as individuals and members of community. Omry argues that in these films—in part because of the new role of technologies, now introduced into Bond's very body—the body itself becomes "a contested site of action" (p. 71).

This volume contains three reviews. I here only want to draw attention to George Sochan's review of Evgeny Morozov's *The Net Delusion: The Dark Side of Internet Freedom* because it can be fruitfully read for a position countering that expressed in the article by David Koepsell and Floris Kreiken and in the piece by Raphael Sassower. Morozov is less hopeful than our contributors that technologies and in particular contemporary media might be used to effectively foster democratic processes. He instead points to the many ways that these interrupt democratic movements and serve as false surrogates for legitimate civic engagement.

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Virtual Reality and Mediated Immersion

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Virtual Reality could be conceived as an extension or an alternative to our reality, akin to leaving Plato's cave in order to more fully know the world. Mediated immersion has been the means by which such an extension is made possible. But instead of opening the horizons to alternative realities, such immersion—in the arts, gaming, and pedagogy—teaches us to appreciate how we experience the world we already know, where *simulacra* dominate, as understood by semiotic theory.

Keywords: Technoscience, mediated immersion, virtual reality

I

Because technoscience in the 21st century incorporates a new set of digital devices and media, a fresh look and full reassessment of 20th century debates among technophiles and technophobes are demanded. The urgency of such a reassessment is no longer linked to the horrors of World War II, for example, or the threat of a nuclear holocaust, but instead to the dangers of a reconceptualization of power relations among digital experts, their corporate sponsors, and individual recipients and users. As they produce, distribute, and consume a digital culture in a capitalist environment, they are redefining what remains contestable and what

has become acceptable background information, what is or is not meaningful for consumers and bystanders (Doueihi, 2011). One way to enter these ongoing discourses and debates is through the notion of mediated immersion—a form of learning and experiencing that defies classical existential categories and seems to promise more than it can deliver. This critical review must be historical, conceptual, and practical.

Mediated immersion is associated with at least three areas of research: art, gaming, and pedagogy. In what follows I will briefly survey all three areas as they inform each other both historically and conceptually. All three areas are also framed by psychological studies and explorations that attempt to update concerns with our consciousness in general (Rossman, 1991) and conscious behavior in particular (Ryan, Rigby, Przybylski, 2006). Though infused with a concern for the changing world in which we live, a world more extensively populated by digital devices, most scholars and commentators still attempt to respond to perennial questions raised by the ancient Greeks. Their views illustrate that though digital technologies seem to enhance and expand our engagements with the production of our external and interior realities, they do little to help us discern reality among their virtual presentations. Political economy—as a fabric of political power relations and the economic means by which they are manifested and contested—remains a useful framework against which to critically assess the success or failure of the cultural dominance of digital technologies, though it at times is overlooked by humanists. Focusing on mediated immersion in art, gaming, and pedagogy, some psychological insights

come to light that suggest a way to reconfigure power relations in a capitalist system.

II

Socrates has dealt with two of the perennial questions that haunt us till today: First, what is real? And second, what medium or activity will get us closer to finding that reality? To address the first question, he offered the allegory of the cave in which he claimed that all we see most of the time are images projected on the cave's wall rather than what is happening outside the cave; we have to turn around, so to speak, and on rare occasions, we can indeed see reality for what it is, outside the cave, with all its grandeur and complexities, in its raw and therefore real, natural sense. Our senses will no longer deceive us once we abandon or escape the confinement to the cave. Our "mediated" existence can be overcome and we can experience direct observation. Our "immersion" in the cave can be eliminated. Only then can we know the world and be both literally and figuratively free!

Worried as he was about deception, Socrates also railed against the sophists and poets. Unlike the philosophers, whose quest for truth and wisdom was uncompromised, these charlatans were able, with their sweet talk and imagery, to confound the minds of people and mislead them. While pretending to tell people about reality they in fact erected edifices of unreality that manipulated their audiences. In his view of the Divided Line along which human faculties were organized, the imagination was at the lowest point, while dialectical thinking at the highest. Socrates' worry, in short, was

that the arts and humanities, as we call them today, would not get us any closer to knowing what is real because of their insistence on some "mediated immersion" that depends on the imagination, that entertains and cajoles us to believe in sirens and unicorns, in the activities of the gods, and the tales of an afterlife. Philosophical inquiry was for him then, and remains today, the exclusive antidote to imaginary speculations: a critical method to analyze what we know and how we come about this knowledge, which eventually evolves into a set of observations and experimentations, subject to tests and verification or falsification. In short, Socrates was not a fan of mediated immersion.

But mediated immersion has remained with us since we have begun to live in the world and communicate with each other. The mediation has changed and evolved over time as different political and cultural environments have been experienced and as different technologies have developed. And the immersion, too, has changed and evolved, so that more self-reflective immersion has complemented less reflective forms. As humans have become more self-conscious of their environment and their own conceptual apparatus—whether in the Cartesian sense of thinking as *the* mode of existence or in the Kantian sense of self-reflexivity—their immersion has become more self-conscious and voluntary insofar as they have become more likely to make choices about the mediation of that immersion. It is with this in mind that we can skip some two millennia of the history of ideas and land comfortably in the 21st century, where the digital age

dominates our realities, contextualized as it is in the capitalist marketplace.

One of the central figures to concentrate on these issues is Jean Baudrillard, who put forward a taxonomy of simulacra based on the Greek term for imitating that which is real. In Baudrillard's hands, though, the original sense of a correspondence between reality and signs or symbols falls apart, since, for him, eventually there is no reality as such that stands to be imitated or simulated. There is no escape from the Socratic cave. Instead, the signs and symbols we have created and learned to use over time, whether through television or the Internet, are themselves the only reality we can count on: there is no reality outside of the cultural creations we have produced over time, both in pre-modern and capitalist cultures. In his words: "Whereas representation tries to absorb simulation by interpreting it as false representation, simulation envelops the whole edifice of representation as itself a simulacrum" (Baudrillard, 1983, p. 11). And for him, there are successive phases of the image: "it is the reflection of a basic reality; it masks and perverts a basic reality; it makes the *absence* of a basic reality; it bears no relation to any reality whatever: it is its own simulacrum" (p. 11).

As Baudrillard unfolds this order of things, both historically and logically, we come to appreciate that while at first there is an attempt to reflect or imitate reality, in the second stage it quickly becomes an unfaithful attempt or an attempt that fails. In the third stage, the pretense of simulacrum actually eschews the attempt to refer to any reality whatsoever, and the stage foregoes this pretense altogether: it denotes a realization that there is no reality outside of the simulacra

themselves. All stages are intertwined in the web of an advanced capitalism, where the use value of goods and services eventually evaporates or is replaced by the exchange value of different forms of money and their derivatives, such that any reference to real goods and services can be ignored, as we have seen in recent times in the behavior of Wall Street traders and investors, who operate simulacra of hyper-capitalist cycles that are self-referential as well as self-rewarding and self-legitimating.

In a sense Baudrillard turns Socrates' concern with seeing the light of day, the real reality out of the cave, on its head: why not stay in the cave? Is there in fact something outside of the cave? Isn't Socrates just teasing us that we should break from our chains, turn around, and escape the cave? Escape to where? Isn't he offering a false hope that the confines of our reality extend beyond our immediate surroundings, be they cave-like or something else? While Socrates urges us to imagine the truth, he also denigrates what we know to be true; while promising more, he in fact delivers less; while seemingly making us aware of our chains, he actually puts chains on us where none were to be found before. Perhaps it is Baudrillard who is the one who speaks truth to power rather than Socrates. It is he who challenges Socrates' authority in the Western tradition, undermining Alfred North Whitehead's assessment that all we say is nothing but footnotes to Plato. Instead of filling our heads with ideas about the outside world and the true reality that we fail to see, Baudrillard focuses our attention on the immediacy and reality of our simulacra. Perhaps if we master the cave, remain mindful of our position within the cave, and respect our fellow cave dwellers, we may

come to know much more than if we were ever to leave it.

III

In the art world both Socrates' and Baudrillard's views, however similar in perception and contradictory in spirit, have found their footings. Whether we are dealing with the theater (and eventually film), music, or pictorial representation, we are keenly aware that artists are charged with the subtle responsibility to re-present something, be it an emotion, a historic moment, an image, or an idea. The process of re-presentation is set up for failure while attempting to succeed in bridging the real with the fictitious. How is it possible to re-create something that no longer exists? How can one succeed in taking a viewer to a foreign place or bringing the ghosts of yesteryear to life?

These concerns may have motivated the Greeks to build amphitheaters that had (human) surround sound, that were set in special places (mountain slopes or valleys), and that pulled together a large audience seated up high and around the stage (tiered seating). In some cases, when lions were released into the Roman arena to fight gladiators, the reality of the survival of the fittest was in plain view—it wasn't a reenactment, but a staged reality. When a tragedy or comedy was staged, words and sounds, costumes and music, all combined to bring the expected emotive response: laughter or tears, shock or disgust, fear or pleasure. The darkness of the night or the lighting of torches drew attention from one moment to another; the set provided context, and the general commotion transformed a simple stage into an emotional

battlefield. Likewise, architectural designs helped stimulate awe and wonder, fear and inspiration in those who visited great temples, and eventually, in the Christian world, great cathedrals. Finally, just as a poem could put a spell on a listener, a book could spin its tale in a powerful way so as to transport the reader to different realms of the imagination. Magic realism, for example, whether of the Latin American or Mediterranean flavor, is deliberate in the conjunction of everyday realities, fantasies, and magical images so as to blur the demarcation between the real and the magical, the concrete and the fantastic, the here-and-now and the possible.

Deconstructionist claims that there is nothing but a text, in Jacques Derrida's sense (1976), draw on this blurred demarcation. The textual reality of Derrida is akin to Baudrillard's simulacra, a vortex or constellation of variables—linguistic, to be sure—that consumes the reader, draws attention to itself, and demands attention to its own presentation. The reader becomes a participant in the process of reading, re-reading, interpreting, and even deciphering nuances and subtleties that may not have been intended by the author. The reader brings to the reading a background, a personal history, previous encounters and experiences, all of which contribute to an immediacy of experience that transcends the mundane, obligatory reading students feel when assigned a text. The Derridean text is a celebration of the imagination, a capsule with its internal logic, and subtexts—that is, it is full of meanings and surprises. In this sense, then, any text provides its own context, the bounded conditions under which it is experienced.

Painters in the Renaissance developed techniques for foreshortening, and the classical perspective emerged as a formula to cue the viewer to the fact that, though two-dimensional, the painting indeed represented a three-dimensional space wherein smaller figures, for example, were at a greater distance from the viewer than larger ones. One can outline the history of art as committed to the idea that a painting or a sculpture, a play or a score, were all supposed to stimulate in others a sense of reality, whether or not it ever existed or was there, so to speak. This history is also imbued with an ongoing struggle between those who re-present a reality and those who create a simulation of an unreal reality, a utopia or dystopia, regardless of whether it is of the past or the future.

By the nineteenth century, as our understanding and use of technoscience became more advanced, photography came to dominate debates over the direct and accurate representation of reality: the direct reference of a one-to-one correspondence between an image and that which it is an image of seems straightforward. The image, though, is two dimensional, and the object three dimensional. This is where stereoscopy came into vogue, namely, the technique that transforms the two-dimensional photograph into an illusion of depth by using two offset images and presenting them separately—even when through one set of glasses—to the left and right eye of the viewer. This illusion plays off the internal perception of the eyes and the ways the brain reads the information transmitted by the retina. Sir Charles Wheatstone is credited with the first invention of this technique in 1838, and the physicist Theodor Ionescu received the first patents for

the use of this technique for films and television in 1936. The film industry has continuously attempted to simulate experiences allowing full immersion in three-dimensional space. Like IMAX screens, which are so enormous with surround sound that viewers feel as if they are part of the action, 3D technologies have been recently resurrected after almost eighty years, even though they still require special plastic glasses. Incidentally, Wittgenstein is rumored to have insisted on sitting at the front row of the movie theater so that he could feel part of the film. Precisely in order to capture the sensation Wittgenstein had in mind, some prefer watching movies in theaters rather than on flat-screen television sets at home (regardless of the "home theater" fad for the privileged). Movies, such as "The Matrix" (1999) or "Avatar" (2009), make a special effort to be self-conscious of the three-dimensional experiences of the virtual worlds of their characters and their audiences, letting the audience in on the sophistication of the technologies while encouraging the suspension of disbelief.

Whether it is Claude Monet and his enormous canvases of lilies, so large that the viewer feels as if engulfed in the scene (15 ft x 7 ft), or Pablo Picasso and his cubist paintings that tried to show on one plane various perspectives of the same person, the art-world has had an ongoing engagement with the notion of fabricated realities that are presented to audiences. Architectural companies use "Chief Architect," "Autodesk," or "Navisworks," 3D and 4D computer programs that allow their clients to enter simulated spaces and allow construction companies to see what is expected of them. Similarly, manufacturers use cameras

and computer programs to design and create molds for die-casting and tool-making in three dimensions. The fabrication is as much a creation as it is a deception, entangled webs of perception that insist on making nature and life as they know it present, immediate, and urgent: they all want their audiences to experience what they have experienced themselves, whether for sheer entertainment or financial gain.

As we see the evolution of the deliberate creation of illusions of depth and hence the shift back to three-dimensional visual apparatus, we can more fully appreciate Baudrillard's fascination with simulacrum that eventually becomes its own reality, fully divorced from any attempts or pretences to re-present reality. From Renaissance perspectival renderings to stereoscopy and architectural programs, it is only a short step to the Internet's world wide web of virtual realities. The Digital Age is indeed quite familiar: it is definitely part of the same history, roundly fraught with similar struggles of re-presentation and creation. As Oliver Grau (2003) convincingly argues, the shift from so-called illusory art to virtual art is a gradual and expected move, spurred by technological feats, on the one hand, and a postmodern appreciation for the deconstruction of artworks and their props, on the other. Virtual art, then, is a shift towards an engagement of audiences with artworks through a maze of electronically (digitally) mediated and computer-generated realities so as to bring about an immersive experiential moment.

Mediated immersion in films and on the Internet, television and other entertainment media opens ever broader and more subtle commercial opportunities, enhanced by a collective imagination. Whether we focus

on performance art, where artists enact a scene or act out without a script in spaces different from the confines of traditional galleries, museums, and theaters, as a fully integrated experience that engages an audience, or on musical performances, jazz comes to mind as a genre where improvisation is encouraged to the point of being a prerequisite for artistic excellence, in concerts or clubs, in subway stations or street corners, it should be noted that the expectation is to bring audiences to experience directly an internal space where their imaginations can be unmediated. Here mediated immersion is not limited to the visual apparatus of digital or electronic media but extends to its audio features.

Electronic media, as some call it (Appadurai, 1996), cultivates this imagination. Unlike the imagination of an individual who is inspired to invent and create, propose and experiment, a sense of cultural imagination provides a context and platform, a means and an audience, that makes it easier and more accessible to engage an otherwise intimidating technoscience: the instruments are indeed tools for creativity and not the exclusive domain of experts with industrial or military agendas. In this world, then, the notion of virtual reality finds a hospitable home: a social site with greater opportunities to succeed and engage, to explore and be entertained. As will become clearer later, it is a virtual world that paradoxically invites us to engage in the real world. When doing so, it undermines some more traditional power relations that concentrate access to technology in the hands of the few. The economies of scale of the digital age have made its tools and devices inexpensive enough to allow for greater proliferation than was ever experienced in the past. With greater

accessibility, so the logic goes, there is a greater democratic force.

IV

It's worthwhile to focus attention on the gaming industry because it is in the business of mediated immersion and it has become a major staple in our entertainment world. To put things in perspective, while films and movies generated over $10 billion in sales in 2010 and the gambling industry about $2 billion in the same period, video and computer gaming generated $25 billion. According to the Entertainment Software Association, over 120,000 people are employed in this industry at an average annual salary of $90,000. 72% of American households play computer or video games; 65% of gamers play games with other gamers; 58% of gamers are males and 42% females; the average age of gamers is 37: 18% are under 18, 53% are between the ages of 19 and 49, while 29% are over 50 years old (see ESA). Gaming isn't an esoteric activity on the margins of the American economy, but has become a dominant force, whether engaged with on personal computers or mobile phones. For this reason it deserves close scrutiny that can also shed light on the power it exerts culturally.

As a prolific and successful game designer, Jane McGonigal (2011) understands the virtual world is an evolving creation for which humans are responsible and through which they express themselves. The games we play alone or engage in with others on the Internet create a community of players where rules must be followed and where hard work and dedication bring about responsible human behavior. In this sense, she responds

to Appadurai's claim about the social dimension of electronic media, on the one hand, and to the concern with pedagogy, on the other. Games, for her, can become pedagogical instruments that teach us to become altruistic, drawing on our best qualities. The virtual world of gaming, then, can positively affect our social and political life and need not be seen as an escape or even an instigator for violent behavior. Moreover, since our mundane lives are not as fun or rewarding as the lives we find in videogames, and since we seek more rather than less enjoyment (fun, happiness), we should consider modeling our daily existence on the virtual world. The virtual world, from this perspective, is a prelude to transforming the social, political, and moral world and not an extension thereof.

Gaming experience includes "the shortening of the subjective distance between player and game environment, often yielding a sensation of inhabiting the space represented on the screen" (Calleja, 2007, p. 4), so that the player feels present or immersed in the game. What would entice us to voluntarily participate in this presence or immersion? There are social and clinical psychologists who have been studying the "motivational pull" of games, with different results. There are those who have argued that "participating in computer games may foster a number of negative effects, including increased tendencies toward violence, lower psychological and physical well-being, lower achievement and productivity, and more impoverished personal and familial relationships" (Ryan et al., 2006, p. 1). Others have argued, on the contrary, that "psychological benefits can be derived from game experiences, including a sense of efficacy and power

over one's environment…as well as improvement in learning" (p. 1). Regardless of these ongoing debates, Ryan and his colleagues focus on the fact that games are motivational in the sense that "players experience autonomy, competence, and relatedness while playing" (p. 2).

Richard Allan Bartle, who is a pioneer in developing multi-player computer games, proposed a typology of four player types: killers, achievers, socializers, and explorers. He added to this typology a two-dimensional behavioral grid: first, those acting on as opposed to those interacting with the elements of the game; and second, those focusing on other players as opposed to those who focus on the virtual environment of the game. By contrast, Nick Yee's typology of players has three groups: those focused on achievement (mastery, competence, power); social players, who develop game relationships; and immersion players, who escape life and role-play in the games (2005). It becomes clear that the voluntary nature of gaming is primarily attributed to the fact that the players' experience of a virtual world feels real and authentic, at times even more real and authentic than their so-called normal, daily life (Ryan et al., p. 4).

Ryan and his colleagues tried to figure out what variables would engage gamers and what results could be predicted if they indeed felt competence and autonomy while playing video and computer games. They also wanted to know the extent to which self-esteem, as well as enjoyment and presence in the game, would be enhanced by those playing these games. Since they focused on the "psychological needs for autonomy, competence and relatedness, which… might, in part,

account for the psychological attractiveness or 'pull' of games," and correlated them to single and multi-player games, they found experimental evidence that these needs are satisfied in games. More interestingly, they followed the industry's concern to construct games that provide the player "a sense of non-mediated 'immersion' in game environment" (Ryan et al., pp. 14-15). Their conclusions suggest "a positive association between [their] measures of intuitive controls and the experience of presence [or being present right then and there]" (pp. 14-15). Moreover, they emphasize that what they call "presence" is associated with "need satisfaction," so that when players feel "greater autonomy" to fulfill the goals set by the game and to fully express their "competence," they are at ease. This notion of presence allows players to enjoy the playfulness of games rather than worry about the technical or mechanical features of the game and thereby enjoy a greater satisfaction of "psychological needs" (p. 15).

The push from "mediated" to "non-mediated" immersion is of course problematic: any game environment is by definition a mediation of sorts. However, if we recall Baudrillard's notion of the self-perpetuation, self-referential or otherwise, of simulacra, it makes sense for game producers to suggest that once playing a game, there is no mediation, since the presence of the player in the game environment dislodges any layers of artificiality: the experience is real, authentic, and fully absorbing. Unlike chess-players or soccer players, gamers insert themselves into a virtual reality whose engulfing powers delete any reference to an outside world. A chess or poker player can be distracted by the facial expressions of an opponent, a soccer player

can be distracted by hooligans in the field throwing beer cans or by a rainstorm, but the worst that can happen to a gamer is power outage. Otherwise, the gamer is inside the game environment, surrounded by all the bells and whistles, colorful vistas and other avatars going on with their activities, regardless of climate changes.

The fact that most game player typologies include the category of social players, namely, those players who seek to play with others and thereby create social networks of like-minded individuals who freely interact with each other in game-like environments, gives reason for hope in regards to this industry's social benefits. This is not to say that if we wish to achieve social cohesion or a sense of cultural excitement we should all become gamers; nor is it saying that political power relations recede to an irrelevant backdrop when games are available; rather, this suggests that even when full immersion is achieved in virtual worlds, humans still need social interaction and that that interaction, as McGonigal argues, can spill over to our everyday life. Perhaps gaming can enhance a sense of self-esteem and confidence that can assist individuals in their social interactions with others. Perhaps it can even bring together politically marginalized citizens into relevant opinion makers. Regardless of the addictive elements that game escapists or even achievers may suffer from, the potential social and political benefits of this kind of immersion is being noticed and studied by educators.

V

Pedagogical studies that account for the Digital Age describe their subjects (primarily K-12 students) as

members of the "information-age," the "Net Generation," or simply as "Millennials," that is, those being educated in the 21st century. What becomes clear from these studies, primarily undertaken by Chris Dede (2005) and his colleagues at Harvard University, is that the ongoing changes in Internet technologies have an impact on children: they foster particular kinds of interactions that determine different learning styles. Without reviewing the literature, suffice here to say that any sort of mediated immersion students experience outside the classroom environment informs their learning capacity in schools. Moreover, one can choose to ignore those other environments, especially the gaming one, or adapt to their positive potential outcomes. Ignoring digital technologies may seem reasonable in the face of concerns over digital addiction. It may even be the responsible response to an overly virtualized world, where social skills are hampered. Yet, a critical engagement with these technologies may yield positive results, both pedagogical and social.

The positive potential of immersion has been historically realized by foreign language teachers, who have encouraged their students to travel to the country whose language they are studying, or who have refused to speak any language other than the one being studied during instruction. An intensive course schedule that includes dining together and watching films in the learned language are props that encourage a linguistic rather than visual immersion. These techniques are supplemented by tapes and videos, as well as audio and visual stimulations that are supposed to fully engulf students' attention. Computers and video games, as well as the Internet and its various websites, are extensions

for those clamoring for an authentic learning environment untainted by external distractions or contaminated by one's own language.

Appreciating music as another language to be learned, the Suzuki Method pays great attention to the environment in which young musicians are trained. An environmental saturation of sorts takes place, so that students are not simply taught notes and scores, but are expected to immerse themselves in a musical environment that includes going to concerts and listening to music rather than reading sheet-music alone. Pedagogically this is not unlike any kind of immersion whereby students are transformed into a different reality, but one that becomes so familiar that its rules and codes, its notations and its peculiarities are now familiarly contextualized.

The intent for most educators is to get students involved in what they are learning. Is the involvement limited to classroom settings? Is the involvement enhanced by the use of the Socratic Method, a dialectic method of interrogating individual students so as to bring them to the realization that they know nothing and therefore are at the mercy of an all-powerful wise teacher that can bring forth out of the recesses of their brains the right answer? Similar pedagogical convictions inform camps, from youth summer camps that teach outdoor survival skills to corporate boot-camps that are supposed to enhance team-building and leadership qualities. What underlies these activities is the belief that taking youth or adults out of their urban or suburban environments and situating them in the great outdoors will have a transformative impact on their lives, push them to experience nature and their fellow humans in ways

different from what they are used to. The immersion, three days or three months, forces a reconsideration of the conditions of mundane experiences.

But of course, all of these simulated experiences are not only highly structured, they are also expensive. They turn out to be the purview of the privileged. Can computer simulation have the same effects with minimal costs? Can a computer or video game be experientially as potent as being "there"? Commercial airlines years ago figured out that having simulated training for their pilots is safer and cheaper than having them fly actual airplanes when being trained. As one considers the economic advantages afforded through digital devices, there are always already psychological factors at play with any critical pedagogy. On the positive side of digital pedagogy, one can see students (pilots) more likely to respond to a critical assessment of a paper (training session) with a quick revised turnaround (retaking a training session): it's easy to restructure a paper (instead of the old-fashioned cut and paste and retype process that took hours, if not days) or add citations (a few minutes on the Internet beats the arduous process of checking books in the library). In these cases, the Digital Age has enhanced the pedagogical effects of critical learning of Millennials.

There is more to it than simply the shift from the typewriter to the personal computer. The electronic media allow for additional conveniences, such as Blackboards on university websites and chat-rooms for students who wish to discuss a topic or collaborate on a project. These are not incidental or secondary, for they help in time-management and the allocation of time according to appropriate pedagogical priorities. The

appropriateness, of course, is in the eye of the beholder. But this much can be admitted: if less time is spent (wasted) on going to the library to check a reference, if less time is spent (wasted) on retyping a paper that needed revisions, if less time is spent (wasted) gathering the tools of research, perhaps more time can be spent (invested) in thinking critically about what one is learning. If used consciously and deliberately, pedagogy can engage students more fully and productively: they may feel more comfortable exploring ideas and websites with delight and curiosity. Instead of bemoaning the hours students spend surfing the Net, we should help them think critically and filter out what is worthwhile surfing for and what is not, what will benefit them and their society as opposed to what will become a distraction or nuisance. The responsibility lies with educators at all levels to be part of the virtual worlds their students inhabit. If games offer presence, make sure you are present in the classroom; if games offer autonomy, make sure to encourage autonomous thinking; if games offer entertainment, make sure your delivery is engaged and engaging; if games offer a modicum of competence, celebrate their competence. In short, pedagogy should adopt mediated immersion to enhance broadly defined educational goals.

VI

Mediated immersion accounts for mediation, technologies, instruments, environments, and immersion, a sense of presence and complete absorption of one's experiential moment. Mediated immersion also eschews its mediation, trying to make the experience feel as

unmediated as possible, making one feel authentically there without noticing any apparatus whatsoever (see Trouillot 1995, p. 150 on authenticity and simulacrum), and its immersion, attempting to make the presence feel natural and unforced, as if there is no reality outside the virtual one. The success of mediated immersion in the Digital Age consists in its attention to the aesthetic features that encompass and determine our experiences, incorporating all our human senses, or at least as many as possible. What comes to mind is the notion of the sublime, where no words can fully explicate what is experienced, a moment in time or a duration of many hours; where the suspension of disbelief takes over human cognitive and analytic skills; where something real is felt, so real in fact that it leaves its mark on our soul forever, never to be recaptured in just that wonderful and strange way. But when the sublime eludes us, when we remain anchored in the materiality that surrounds our existence, in a Socratic cave-like manner or in a Baudrillardian simulacra, we can find inspiration. There is a growing movement in New York and beyond that celebrates the middle ground between art-making and food-making, for example, where the immediacy of human experiences is honored and practiced, no matter how mediated the instruments of communication may have been. What matters at the end of such Internet mediation is that individuals come together to celebrate their lives, immersing themselves in a communal setting, being mindful of the circumstances that separate and bind them, that can give them peace of mind.

However, when they do so, they must remain mindful not to be seduced by new digital devices, which can serve as shields against economic and political

dominance. More specifically, they must realize their political responsibility to the community, even when the interaction isn't about an impending election in Egypt, for example, after the Arab Spring, but is a casual dinner in Brooklyn. Individual perceptions, however mediated, become powerful tools of resistance when expressed publicly, through blogs and Tweets, using social media as outlets for creativity, individual expression, and dissent from popular or oppressive views and ideologies. Whether mediated immersion retains pedagogical or social redemptive qualities, as promised by technophiles, or deteriorates into an oppressive mechanism by which to control the masses, as technophobes would warn us, there is an element of escapism to digital technologies, an element whose power is indisputable. This power can be harnessed to protect us from hegemonic indoctrination as well as used to ferment creative outbursts. Considering the concentration of political and economic power in the hands of few global corporations, it's not surprising that academic critics have faith in the democratizing potential of digital technologies. Having faith, though, is a far cry from the actual realization of the liberating potential of the Digital Age.

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The Open Source Society (and its enemies)

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If we apply Popper's groundbreaking theory of falsifiability and the notion of the open society to our current democratic system, we can see that there is much to be said for democratizing decision-making processes in general. The open source software community and movement is an excellent example of how a group of non-professionals can come together and create innovative, useful products that compete with closed or proprietary analogues, guided by an ethical commitment to keeping innovation transparent and contingent. Those same principles can help modern societies to create a better politics and a better democracy, and reach toward the goal of the open society. For instance, Iceland recently announced its intention to open up its charter to public editing and comment, reflecting a growing awareness of the role of amateurs in creating working institutions. Open source is a natural outgrowth of the same spirit reflected in Popper's description of open societies. We argue that this spirit and its methods can be broadly applied to rule-making in the interests of democracy, aided by technological and institutional advances in open source methods.

Keywords: open source, the open society, democracy, open technology

Introduction

The open source movement has been praised worldwide for its ability to focus the contributions of

amateurs to create ever-expanding and improving (typically) free products that compete with those of large (closed) software companies using proprietary methods. It has served as an example, heavily cited by influential writers, of the great new benefits the Internet can help foster (Leadbeater, 2009, p. 97). Its characteristics make the open source movement seem quite unique. Creativity is stimulated by the free sharing of ideas (and recognition of the value and morality of some "commons" which is kept open to all) rather than by clinging to intellectual property monopolies or closed and secretive processes typically used to protect business. In open source methods and products, instead of relying on a select group of paid employees, amateurs and professionals alike contribute from every corner of the world (typically for free). Those same amateurs manage to produce products that can compete with highly-capitalized, professionally produced works. A prominent example is Wikipedia, an encyclopedia bigger than any before, with contributions by amateurs, based on a non-proprietary model (http://www.wikipedia.org). Other examples include open source software products, some of which (like Apache) power the backbone of the Internet itself. In many ways, the open source movement and its methods embody principles already generally accepted in the sciences, where theories are constantly revised, tested, and improved upon and inquiry is conducted in the open for all to review.

It would be interesting to apply open source principles to the processes of liberal democracy, as indeed it seems the government of Iceland intended to do by opening up its charter to public editing, wiki-style

(Siddique, "Mob rule"). Our technologies embody our political ideologies, and the current battle in the world of science and engineering mirrors past and ongoing battles of political ideologies. One model of technological development and innovation is embodied in current concepts of open source, which owe much of their genesis to the techno-political ideas of Richard Stallman and his "free software" movement (see Koepsell, 2011, pp. 77-79).[1] The other model is the more dominant "proprietary" or closed model. There are many cases of successful, open, non-proprietary business models in innovation, science, and technology, but might these examples inform democratic institutions for polities as well? As a normative framework, we will start with the principles described by Karl Popper regarding ideal liberal democracies, what he calls the ideal of the "open society." Then we will look at the parallels between closed societies and "closed" innovation and consider how "open" innovation as embodied in the economic model embraced in the "open source" movement could provide benefits and inform methodologies for open societies in general.

Popper and the Open Society

In the beginning, there were Plato and Aristotle. These two seminal and well-known philosophers mark the departure points for much of western history and philosophy, as their ideas came to be adopted and adapted, to varying degrees, by the major Western

[1] Stallman's ethos is inspired by the (white hat) hacker ethos, according to which all software should be open to tinkering and alteration, and not bottled up by either technology or laws.

religions and polities. The writings of both still are compulsory reading material for any philosophy student. In the end, according to Karl Popper, an authoritarian ideal attributable mostly to Plato appears to have won throughout most of history, at least on the broader, socio-political level. In his groundbreaking, two-part work, *The Open Society and Its Enemies*, Popper argues that Plato's philosophy paves the way for authoritarianism and totalitarianism on both the left and right. Plato's *Republic* and various dialogues, Popper argues, make the case for closed societies, which he defines as those societies that value stability over freedom, deriving their justification in all their actions and continued power by the conjunction of certain moral virtues with the state and its mechanisms. According to Popper, Plato's theory of the state and its proper form was based on his acceptance of the truth of historicism—the notion that history unfolds as it does according to deterministic laws. Popper criticizes historicism in general, contrasting Plato's apparent support for it and authoritarianism with the ideals of democracy supported by Socrates.

Popper's political theory makes use of his demarcation between science and non-science. The critical difference between the two, according to Popper, lies in the fact that science is (or should be) falsifiable. Scientific hypotheses should be challenged not only by testing a hypothesis with empirical data, but by seeking to falsify it. In fact, making a scientific theory dependent only upon affirming observations would be too "easy" and even "risky." Following this definition, Popper considered natural sciences to be proper sciences but pursuits such as astrology to be "pseudo-sciences."

Astrology's predictions are not capable of *falsification*, and so, as a field, it fails to amount to a science. Popper observed that science is an organic process, just like human life, ever expanding through problem solving. Attempts to falsify will lead to new questions, or help confirm over time whether hypotheses are useful or true, and slowly expand the range of human knowledge.

This demarcation is one of the central themes of Popper's critique of Plato (and Hegel and Marx). According to Popper, Plato's ideas derived from historicism the belief that history unfolds following a set of certain deterministic natural laws, towards a known end. Based on the observations of historical patterns, it was thought one could predict the future and its developments, including those in the political and social domains. According to Plato, to speed up and aid social progress, political leaders needed to abide by these predictions. In that sense, leaders played an essential role in Plato's theories. In fact, Plato considered leadership essential for the stability of a society. A leading class of "philosopher kings" needed to rule in order to attain the public good and to avert anarchy, because only those kings could be wise enough to ensure stability (see Popper, 2008). According to Plato in *The Republic* (trans. 2008), we must foster the development of certain character traits, and cultivate aristocratic leaders, i.e. "[h]im who answers to aristocracy, and whom we rightly call just and good…." Yet he also describes "the inferior sort of natures, being the contentious and ambitious, who answer to the Spartan polity; also the oligarchical, democrital, and tyrannical" (p. 553). For Plato, commoners are suspect,

and only an educated, aristocratic elite is qualified to run the state.

Democracy, for Plato, is dangerous because it fosters contention rather than order and honor. Plato (2008) believes that only an aristocratic class, schooled in the principles of philosophy, can rightly direct the state. Freedom is anathema to the order he craves: "These and other kindred characteristics are proper to democracy, which is a charming form of government, full of variety and disorder, and dispensing a sort of equality to equals and unequals alike" (p. 574). Plato's *Republic* is an argument against both the possibility and the value of equality, and in favor of a sort of "timocracy," in which aristocrats, imbued both with inherent virtue and philosophical education, direct the affairs of lesser citizens. According to Popper (1963), Plato's argument was based upon historicism and a deterministic view of both the nature of states and people (pp. 455-457).

Through the dialogue, Plato argues that all other forms of government will necessarily lead to dissolution, corruption, and disorder. Popper (1963) blames numerous philosophers for committing the error of historicism in the social sciences, from Plato to Marx:

> I have briefly outlined two historicist doctrines concerning the task of the social sciences and of politics. I have described these doctrines as Marxist. But they are not peculiar to Marxism. On the contrary, they are among the oldest doctrines in the world. In Marx's own time they were held, in exactly the form described, not only by Marx who inherited them from Hegel, but by John Stuart Mill

> who inherited them from Comte. And they were held in ancient times by Plato, and before him by Heraclitus and Hesiod. (p. 455)

Popper considered this historicism to be non-scientific, as it was non-falsifiable. But he also considered these theories to be a risk to peace and prosperity, as they would lead to totalitarianism and authoritarianism, centralized government control, and large scale social planning as exemplified in both right and left-wing authoritarian regimes in the twentieth century. It is unsurprising that Popper wrote these words in exile as the Second World War took place.

According to Popper, society does not move forward through historical forces, but by the cumulative actions of individuals, unable to foresee the exact consequences of those actions. This is precisely why centralized and totalitarian governments must ultimately fail; the exact results of individuals cannot be foreseen. Popper's description of the open society makes Plato a primary culprit for authoritarian tendencies, though Popper's work has been criticized as oversimplifying Plato and his impact on Western thought (Bhargava, 1994). Regardless of Popper's interpretation of Plato and its possible oversimplification, Popper provides his own unique and valuable insights into the ideal nature of democratic institutions, openness in science and society, and its potential value and even necessity.

Key to Popper's political theory is his idea of falsifiability. Society itself should abide by the same principles as science. In alignment with several centuries of experience with the scientific method, scientific hypotheses should be critically evaluated and attempts

made to falsify them. The same holds for the political sphere, ideas, and policies as well. Society should foster critical thinking. According to Popper, this method promotes the evolution of an open society. In such a society, it would be possible for individual citizens to evaluate government policies and to contribute to, criticize, or alter them accordingly. Central to this notion is that citizens should have access to information and should be free to voice their critical opinions. This way, society can progress, as the members of that society strive to build on and amend its structure and institutions (Popper, 2008, pp. 201-231).

Building "open societies" is the goal of modern liberalism, as it admits to the potential for fallibility, which parallels nicely Popper's theory of scientific "truth." "Society needs to progress from a closed, dogmatic society, to an open society, that would unleash the critical powers of man" (Popper, 2008, p. 25). The essential difference between open and closed societies, this admission of a disjunction between the state and truth, is the model for political pluralism, and it serves the empowerment of citizens to be free to critically evaluate government policy and amend it.

From Trade Secrets to Open Source

The history of innovation and its relations to markets parallels the opening up of societies. Innovators who wished to capture a marketplace with their ideas were, at one time, faced with little potential for robust competition simply because their products or practices remained difficult to copy. Over time, and as others "reverse-engineered" their products and processes and

capitalized efforts to copy them, artisans began to develop the first, nascent forms of protection for their works: secrecy and violence. To protect their arts, those who were skilled in various trades formed *guilds*, which were extra-legal institutions meant to curb a potentially free market (ensuring local monopolies for early entrants and subsequent barriers to entry) as well as to promote confidence in a certain art, product, or practice. The means of enforcing their market monopolies often included violence or the threat of violence. Those who refused to join the guild, but who attempted to practice their art or sell their goods, were often rather forcibly put out of business (Dommering, 2000, p. 25).

As Europe emerged from the Middle Ages into the Renaissance and eventually the Enlightenment, and with the growth of science as an institution, more genteel means of protection for the useful and creative arts began to be developed. Private violence would no longer suffice to prevent the spread of newly acquired knowledge and freshly devised arts. Moreover, as the culture of the new enlightened ages began to prefer the dissemination of information over secrecy, new institutions were slowly devised to ensure that monopolies over certain profitable arts could be maintained. Sovereigns institutionalized monopolies as patents, and then copyrights, protecting producers of new, useful, and creative arts in their profits for terms of years. The benefit to the crown was that it encouraged trade and industry within the kingdom, and artisans and inventors were encouraged to immigrate and share the wealth of their knowledge. Another benefit was that governmental control could be exercised *after* releasing

new ideas or knowledge to the public (Dommering, 2000, p. 25).

The guild system was a quintessentially closed system, embodying all of the negative aspects of closed societies. Relying upon institutionalized violence, a rigid hierarchy, non-democratic means of seizing and holding power, and no public input into the modes and methods of operating, guilds were a threat to everyone, including the crown. Of course the crown too represented many of the aspects of the "closed society" despised by Popper and embraced in polities since before Plato. The center of power, both ecclesiastic and secular, under the guise of the divine right of the sovereign, subordinated the will of the people to its own notions of what should take priority. By doling out monopolies, the sovereign could maintain a new form of control over the threats posed by potentially open and free markets. As intellectual property protection became institutionalized, first through monarchial sovereigns and then in the U.S. Constitution (which empowers the Congress to create monopolies in Article 1, section 8), this new form of cohesion between sovereign and capital had to be reigned in on occasion.

Monopoly, especially when created through governmental action, is anathema to the open society. The open society demands democracy, transparency, and recognition of fallibility. Success must depend upon merits of either the process or the product, and not be due to the pure exercise of force or private favor. Failure must be able to be addressed in the marketplace and in the ballot box, and the authority of whoever wields control over a segment of society (either a market or a government) must be always open to challenge.

Monopolization of markets and monopolization of power can only be accomplished justly by merit, not by the use either of *ad hoc* violence (as in the case of guilds) or institutionalized, implicit violence or its threats (as in the case of governments). Yet, even as open societies began to flourish in the wake of liberal-democratic revolutions and the era at least of monarchial closed societies began to draw to a close, the potential for a truly open society was never achieved at a governmental level.

Instead, modern liberal democracies adopted facets of closed societies, replacing the marriage of church and state with the marriage of state and market. Creating incentives through state-sanctioned monopolies, as well as legal institutions that protect and defend business artifacts, states supplanted market forces with mechanisms prone to the same tendencies as closed societies. This is also seen in IP. Unimpeded by the individual valuation of consumers and the tests of market forces, corporate and individual beneficiaries of government largess in the IP system can price their goods as they see fit and overcome the natural and democratic market forces that would otherwise weed out good products from bad, allow greater competition, and determine the worthiness of a particular innovation in an unfettered market. This same marriage of state and market is an invitation for corruption, and as we have seen, has encouraged the creation of a corporate-state oligarchy, subsuming much of the power and decision-making to the interests not of the governed masses, but of the corporate elite.

There have been tension and periods of unease about the extent and impact of governmentally

encouraged market privileges. From the British Parliament's Statute of Monopolies in 1623 (which largely excluded from its regulation patents and guilds) to the Sonny Bono Act of 1998, the rights and extents afforded by monopolies blessed by the sovereign have waxed and waned. In the past fifty years, they have mostly waxed. But thanks to the growth of new forms of grassroots attacks against monopolization, and the technologies that enable these new efforts, a third way is emerging—one that promises to enable the open society, even against the entrenched interests that continue to block its emergence: open source. As averred above, open source grew out of the free software philosophy expressed most vocally by Richard Stallman (who opposes open source now as being too commercial) partly as a response to proprietary and buggy systems that dominated PCs in the 1980s and 90s. The "Open Source Initiative" (OSI) was a coordinated attempt to harness the productive and potentially profitable power of distributed, open methods of development against large monopolies that had been partly built upon state-sponsored tools such as IP (Koepsell, 2011, pp. 77-79).[2] It is a market response to state-monopolies, and has attracted to it some of the biggest software companies in the world (see http://www.opensource.org/history).

Fallibilism, science, and open-source-i-ness

[2] Open source as used now in commerce does not necessarily mean free, as open source products and services can be sold. But they are not protected by standard modes of IP protector, like copyright or patent, and they are open to alteration. The political genesis of open source as an alternative to state monopolies remains even in light of the potential for profit.

The methods and tools now embodied in what we call "open source" owe their genesis in many ways to science itself. The methods of the sciences, in what we consider their ideal forms, are those of open source innovation. The ideal institutions of the sciences (as described, for example, by Merton, 1973) require: communalism, universality (location, for instance, shouldn't matter), disinterestedness, and organized skepticism. Monopolization of knowledge through institutions, both private and public, undermines the ideals of scientific inquiry. Institutional biases, individual interest (in both fame and profit), and hopeful credulity, all further erode the ideal methods of science. Conversely, the collective, communal, and staggering march of science, which proceeds through the development of hypotheses and processes in which they are subject to testing by a wide-ranging community of researchers who are skeptical of authority and who are interested only in the slow emergence—through these processes—of models of reality that work, exemplifies both the scientific method in its ideal form and open source as a method of innovation.

We have never truly seen free markets. As described above, state-supports have propped market players historically through entrenched institutions that create *de facto* and *de jure* monopolies. Markets, especially when protected by states, never have embraced the methods of the sciences. If truth or a market share can be monopolized not by merit but by privilege and the grace of the sovereign, then neither truth nor products gets fairly or fully tested. In an open market, for instance, as in an open society, no form of

privilege afforded through sovereigns could be tolerated. Only the tests of consumers and their desires would suffice to determine whether a market actor and its products or services should succeed or fail.

Nor have we ever been truly politically free, nor experienced a truly open society. Our modern liberal democracies invariably contain vestiges of closed societies, in part because of the marriage of the market and the state. Market privileges have been lobbied for and won by those best able to corrupt representative political systems that require money for power. Our disdain for a lack of order and the uncertainties of a fallible system cause us frequently to choose a measure of certainty over the uncertainty of further experiment.

But science, which supposedly underlies much of our modern world, requires uncertainty to move forward. A hallmark, noted by Popper, of a *bona fide* scientific hypothesis is that it must be theoretically possible to falsify it. Moreover, the present state of scientific knowledge is always provisional and contingent. While the basic axioms of mathematics are generally considered unchallengeable (and for good reason), empirical truths deduced from experiments conducted on things in the world are always subject to falsification. The next experiment can always prove everything we once assumed we knew from experience to be wrong. Likewise, the open society requires skepticism about our current institutions, constitutions, and leaders that no current liberal democracy embodies. After all, who wants chaos?

Open source methodologies employed in product design have shown us that communities can treat things always as "works in beta" and produce useful,

functioning, flourishing things without chaos, or at least produce things in which chaos may be embraced as a feature, not a bug. In many ways, the open source "movement" and other, similar, anarchistic approaches to collective works embody the principles of science that we have forgotten to apply to the social sphere. Can we envision applying open source methodologies and culture to our political and social institutions, and if we do, will this bring us closer to realizing a truly open society?

The Open Source Society and it Enemies

The hallmarks of the Open Source Initiative in software development are that the processes involved in creating things will be open for all to see and to modify, and that modifications can be freely made by anyone and distributed throughout the system under the existing license (Benkler and Nissenbaum, p. 276). This is more or less the philosophy behind Popper's conception of the open society, modeled after, in many ways, the assumptions and methodology of the sciences; society should enable individuals to dynamically and critically evaluate government policies and amend them. No code can be a black box. No process for devising the code can be closed. The processes and products of collective intentionality must be open to revision, must not be considered sacred, and must be alterable. Can we extend this model, embodied however imperfectly in open source methodologies, to social systems? What are the dangers and promises of doing so?

Consider, for instance, two prominent "public" debates with far-reaching economic and social

consequences: the Iraq war and the health care/health insurance debate in the U.S. Although each debate was conducted mostly in view of the public, by various parties with differing opinions and interests, the process of *resolving* each has been inherently "closed," as nearly every element of decision-making in our liberal democracies remains closed. That is to say, while information of a sort flows outward to the consumers, or constituents, there is virtually no element of community input beyond the occasional vote for our representatives. Moreover, certain players have a greater say and influence over the outcomes, and those interests are clearly visible in the shape of the emerging policies. But what if we modeled these decision-making processes on open source initiatives?

Rather than devising war-plans and engaging in a ruse of a search for WMD behind closed doors, poking heads out to warn of the danger of "mushroom clouds" and dangerous madmen with biological weapons, what if our military surveillance data were available for all to peruse and the CIA were as prone to public investigation as it is to investigating the public? The black box of state security would be revealed as imperfect and could be tinkered with for any purpose, whether good or evil. Many would fear the manipulation of such a system against us by enemies with insidious goals, but the current system has also apparently been manipulated for equally suspect reasons, and with dire consequences. We just didn't know it until it was much too late. Rather than a small, easily fooled (or foolish) group of congress-persons with security clearance nodding approval to a war based on faulty or manipulated intelligence, might a public with access to the same data,

and given the ability to provide instant input, have reached a more sound conclusion?

Consider the health-care debate. While the public airwaves and forums were flooded with a range of opinions, and entrenched interests spent millions on advertising to influence the process, there was really very little actual public input into the construction of a bill that might have accomplished the goals that most people agree upon: better, cheaper health care. Rather, bills were written and argued in committees, behind closed doors, by people with vested interests in the form of campaign contributions from various parties, and interim versions leaked or released strategically. Furthermore, while Thomas.gov provides one-way viewing of bills at various stages of debate, it misses a crucial feature of the open source age: an "edit" widget. By divorcing corporate monopolization from political processes, as open source divorces monopolization from product development, might we ensure more robust institutions and better results? (see Lessing, 2011).[3] We cannot know until we try. This is the lesson of empiricism. Shall we reject historicism in politics, as Popper suggests, and truly open up our society at last, capturing the lessons we have learned recently in software development? Those lessons are counter-intuitive, but continue to be confirmed by experience, as the most trustworthy scientific truths are. And what are those lessons?

1) We can trust the masses: While many fear the influence and input of an unenlightened "mob," a fear

[3] Lessing describes the illusionary nature of our current systems, and suggests, among other things, greater openness and public deliberative participation, as well as campaign finance reforms.

shared by the bourgeois founders of the U.S. as well, opening up processes to an unruly, untamed electorate actually tends to work. Fears of anarchy are not borne out by our select experiences with anarchism. The former seems not necessarily to follow from the latter, so why do we fear it? The alternative to "mobs" is entrenched interests, or mafias, who will use their power to influence processes to their benefit anyway. Why not open up the process and risk the benefits of constructive anarchism, and prefer the "mob" to vested interests? We know that a group of people can, under the right circumstances, come to decisions we normally reserve for 'experts' (Surowiecki, 2005). We have also seen that open source amateurs can create products or content that can compete with that created by so-called professionals.

2) Closed systems have their own problems: Even one of the authors' preferred operating systems, Mac OS, started out as a very poor product, prone to crashing, and impossible for users to debug. Only when Apple scrapped System 9 and rebuilt entirely on a Unix based system did things become a bit better. But Linux is better still. It is free, open, and robust, and while its evolution, rollouts, and support leave a lot to be desired for institutional users who expect a certain level of ongoing customer service, the product is just as good if not better because of its openness.

Furthermore, why shouldn't polities benefit from a similar approach? Do we prefer yelling at town halls to free and open tinkering with the code itself, tracking versions and changes, and finally adopting something which works just well enough? Without raising our voices, and beyond the noise of pundits, politicians, and

placards, the citizen-user can fiddle with the code at will, tweaking here and there, and perhaps become rewarded collectively through our mutual adoption by a community of users. As mentioned at the beginning of this article, the Icelandic Constitutional Council, which completed its work in July 2011, did just this by opening up the daily debate of the council to public comment, "crowd-sourcing" the process to a degree (Fodden, 2011).

3) Truth is never final: What works is never necessarily complete. New improvements can be made without trashing an entire system, and adopted with little stress. This is especially true if the changes are user-generated, and the impetus for the change is not driven by marketing but rather by need. Consumers will accept new version roll-outs, staggered as necessity demands, rather than as a scheme to bring in additional revenues or because the initial product was too buggy to be released in the first place. Citizen-programmers, generating the code of our sociopolitical operating system, providing debugging and amending as part of their duty as a conscientious community of users, rather than accepting the wisdom of philosopher kings, will make things that work, and moreover, that can be changed when they do not. We can reject the monopolistic vestiges of our closed systems and closed societies finally, and embrace the spirit of open source in a truly open society.

Others have begun to propose applying the lessons and some of the methods of open source to political systems as well. In *Open Source Democracy: how online communication is changing offline politics*, Douglas Rushkoff (2003) suggests that open,

participatory methods of governance modeled after open source methods will lead to greater justice. Matthew Hindman (2007), too, in his chapter "'Open Source Politics' Reconsidered: emerging patterns in online political participation," argues that Howard Dean's campaign in 2004 showed some of the promise of "crowd-sourcing" political campaigns along the lines of open source problem solving. We agree with these analogies, but make the further case that open source methods, not merely the technology, are what matter. Moreover, these methods are inherently scientific as the scientific paradigms described by Popper are necessarily implicated in open source *philosophy*. The open source polity could well exist without any of the current information technologies. What is vital is embracing the value of citizen involvement at every possible level of decision-making and recognizing that the importance of falsification and continued questioning of hypotheses are what make questions (including those pertaining to society) scientific.

Democracy and openness

Of course, this is a very idealistic vision, which some would claim is completely unrealistic and unlikely to be embraced by pragmatists and realists. We reject the notion that such experiments are impossible and suggest that efforts that have been fruitful in technological innovation provide an insight into our character and ability to abide more generally to open source principles. Some might say that software is just the stuff that we use on computers, and politics drives economics and societies with much farther-reaching

consequences than binary code. But we would argue that we ought to consider experience, and look at the evidence, and accept that in many ways liberal democracies still fail to meet the potentials posed by Popper's vision of open societies. We should accept that if there is an ethical or moral need to strive for Popper's ideals, then perhaps we can learn from the examples that have proven some measure of his hypotheses in the technological and scientific realms. Perhaps when all our pragmatism and realism fail, it is not vice to try a bit of the idealism. Locke, Hobbes, and Marx have all expressed ideals that have been tried, tested, and failed by degrees. Revolutions fought in the name of idealism have changed our international political landscape and killed millions in the process ever since political theorizing started, and every new entrenched system becomes conservative no matter how revolutionary its roots.

So we can do a rough utilitarian calculus or approach the problem somewhat conservatively if we prefer. There are some things we can do immediately, including opening up more of our political decision-making to user-scrutiny, as indeed some recent decisions to declassify some of the U.S.'s state-secrets is apparently meant to do. Even though, for example, Wikileaks has received a lot of criticism for revealing classified information, it has brought to light the fact that lies were at the basis of a decision to go to war. That is information that simply cannot be withheld from the public. Information like this must be available to the public earlier, and we therefore need to stimulate civil journalism to scrutinize decision making. We can also seek to provide greater means for input from citizen

users, informed by more transparent provision of data. Political parties alone appear to be failing to provide adequate active participation in the decision making process. Thomas.gov could provide message boards, or better yet, a wiki interface for bills under consideration. There should be more room for citizens' initiatives as well. Encouraging citizens to organize themselves to gather signatures and place new proposals on the agenda can help further stimulate democratic participation. Benkler and Nissenbaum (2006) have already argued that participating in open source projects strengthens important moral and political values.[4] We can edge ourselves closer to an open ideal by preferring methodologies for governance and debate that allow more voices and doing what we can to take away the influence of money and power, preferring instead the proliferation of points of view and open dialogue.[5] We can strive for a more proactive government, one that seeks to inform its citizens more on policy, and one that guarantees access to vital government information. The open government initiatives that have already been embraced by the state of California and some cities in the western world are interesting experiments, testing how the Internet can bring citizens closer to government and decision making. By making data publicly available and having creative citizens design "apps" that allow other citizens to view and use that data, we can allow for

[4] The authors argue that "commons-based, peer production" fosters the ethical virtues of autonomy, independence, liberation, creativity, altruism, among a number of others.

[5] See, for example, "Open Secrets," http://www.opensecrets.org/, on the contributions candidates receive for their campaigns and how much companies spent on lobbying.

more transparency, service, and participation.[6] We can recognize that we are engaged in a constant experiment, worthy of revision, and not too sacred to alter because there is still the very real possibility that someday, somehow, we might just get it right.

Conclusion

According to Popper (2008), "the future depends on ourselves, and we do not depend on any historical necessity" (p. 19). If we apply Popper's theory of falsifiability and the open society to our current democratic system, we can recognize there is much to be said for opening up our decision making process to the "rabble." Plato's (and others') fear of chaos and of the uneducated masses has proved to be both anathema to scientific advances and to democratic principles. Moreover, the "experts" don't always get it right. There is value in the wisdom of the masses. The open source community is an excellent example of how a group of amateurs can come together and create an innovative product that competes with other products on a world stage. Those same principles can help modern societies to stimulate a better politics and a better democracy.

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[6] See, for example, the Open Data initiative by the State of California, accessed on August 12, 2011, http://www.data.ca.gov/about.html.

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A Bond of Knowledge: Reading Bond with Benjamin

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With Daniel Craig we are seeing a radical shift in the trajectory of the James Bond series, one that seeks to take into account the dramatic implications of new technologies on how we understand ourselves as human, as individuals, as members of a community, and as a society. Working from Walter Benjamin's notion of aura and authenticity, which rely on the Classical notion of the body as complete and fully knowable, through to Judith Butler's paradigm of sex and gender as performative, this article identifies a return to the body as a reconfigured source of authority for twenty-first century narratives.

Keywords: James Bond, Gender, Walter Benjamin, Technology, Popular Culture, Judith Butler

Introduction

Recent years have revealed a reconceptualization of the James Bond series, in terms of its aesthetics, its philosophy, and its narrative trajectory. Working from a traditional notion of the body as complete and fully knowable, as described by Walter Benjamin and discussed further below, I would like to point out the renewed focus on the body in the new Daniel Craig

Bond films. Bodies in both *Casino Royale* and *Quantum of Solace* are very physical. They are scarred, penetrated, tortured, doubled, and shattered. This article will explore this new emphasis as a reflection of the crisis that contemporary technologies have imposed on the ways in which we see ourselves as human, as individuals, as members of a community, and as a society.

The 2006 *Casino Royale* is fascinating in that it relies on a well-established culture of twenty films, twelve novels by the original author, and numerous texts by as many as six additional authors in order to retrospectively create the *original bond*.[1] Craig's *Casino Royale* is based on the first of the Ian Fleming novels (published in 1953), and in it we read—and watch—James Bond becoming the cold-hearted but forever charming killer in Her Majesty's Secret Service that we know and love. This is done first and foremost through the body of Bond. No longer do we have the technologically knowledgeable but somewhat spare Pierce Brosnan. Instead, we are presented with the hyper-masculinized bodily presence of Daniel Craig. This Bond is thrice exposed, effectively penetrated: through his body, in the infamous torture scene; through his heart, in the doomed romance with Vesper Lind; and through technology, as M inserts the tracking chip into his arm. It is only through these challenges to his bodily self (and his eventual overcoming of them) that Bond can realize himself and ensure safety and world order. Thus through these interruptions and interventions in what has been traditionally deemed complete and

[1] For more on *Casino Royale* and Walter Benjamin, see Omry, 2010, pp. 159-72.

unalterable, the body in its gendered, political, social, aesthetic, and ethical configurations offers a crucial site wherein our very humanity, dramatically called into question by modern social and scientific technologies, is investigated. Drawing from the 1935 "Art in the Age of Mechanical Reproduction," by Walter Benjamin, this article will explore the revised relationship of *technology* and *authenticity* in the twenty-first century. From this I will move to a more contemporary interpretation of the body as articulated by Judith Butler in her theory on performativity. Both paradigms revolve around notions of repetition and reproduction; for Butler this is the constant, reiterating patterns of gender and sex which gives the body meaning in society. Laying out the foundation for studies of gender performativity, Butler writes, "[g]ender is in no way a stable identity or locus of agency from which various acts proceed; rather, it is an identity tenuously constituted in time—an identity, instituted through a stylized repetition of acts" (1990, p. 270). Thus, it is through the constant reiteration of identity structures that a subject becomes recognizable. For Benjamin, this repetition reassigns meaning, shifting it from the moment of origin to the moment of reception.

As Benjamin describes, for classic art (historically, art created *prior* to the prominence of film and other examples of mechanical reproduction) authenticity is predicated on ritual. A work of art is identified and celebrated as authentic as its moment of creation is venerated. In other words, the process whereby the classical artwork is received recognizes that mystical element of its creation—Benjamin calls this the *aura*—and thus its *authenticity* is perpetually reaffirmed. "The

presence of the original is the prerequisite to the concept of authenticity" he writes. Moreover,

> The whole sphere of authenticity is outside technical... reproducibility. Confronted with its manual reproduction, which was usually branded as a forgery, the original preserved all its authority; not so *vis à vis* technical reproduction. (p. 220)

In light of the technology of reproduction, Benjamin identifies a shift in the role of art, and, thus, a move away from the fundamental dependence on originariness: once the *original* can be reproduced flawlessly, the fact of its originality is made redundant. Written in the age of the cinematic propaganda of fascism in Nazi Germany, this shift is for Benjamin a crucial moment in history as the very role art takes in society must be dramatically re-determined. It is my suggestion that *Casino Royale* and *Quantum of Solace*, which soon followed, mark a clear revision of the impact of this technology of reproduction. Popular culture of the West in the 21st century suffers from a sense of loss and a nostalgia for the comfort that a clear moment of origin affords—hence, for example, the fascination with prequels in contemporary Hollywood cinema. In *Casino Royale*, we can see a contemporary making of a moment of origin, effectively a revision of the Benjaminian chronology. As we are brought back to the newly created moment of origin, that historical *here-and-no*w-ness, which was absent from the reproduced work of art, is relocated onto Bond's body. The audience

becomes witness to the scar of technology as it is inscribed on—and inserted into—his flesh.

Critically, this flesh is first and foremost a gendered body. With Craig, we move from the utterly *inauthentic* and dehistoricized body of earlier Bonds (inauthentic in that they lacked that origin which grants them some temporal teleology) to a much more grounded, masculinized, and performative body. Judith Butler's concepts of sight, site, and citation, which I will discuss further below, offer a contemporary variation on the process of authenticity and help us to conceptualize this new body and its function today. The unprecedented interpenetration of technology into the body in Craig's first Bond film can be seen to function as a primary mechanism of knowledge. This capacity for knowledge becomes thematized in *Quantum of Solace* as it becomes paradoxically challenged in the ever-present tension between trust and betrayal that underlies the film. Finally, it is the return to the knowable body as it responds to that of another (as we see in Bond's relationship with Le Chiffre, with Vesper Lind, and later with Camille) that revitalizes that mystical *aura* which Benjamin pronounced obsolete.

Rituals of Authenticity

Let us unpack some of these terms. According to Benjamin the technology of mechanical reproduction marks the end of mystical faith with its rituals of veneration; what we get in its stead is a secularized repetition. If, as he argues, "the unique value of the 'authentic' work of art has its basis in ritual, the location of its original use value," mechanical reproduction, on

the other hand, "emancipates the work of art from its parasitical dependence on ritual. To an ever greater degree the work of art reproduced becomes the work of art designed for reproducibility" (p. 224). The forms of religious ritual on which *authenticity* was based are metamorphosed into secular rituals of beauty. Repeated gestures thus replace abstract rituals, and meaning moves from moments of creation to contexts of reception. Thus, the capacity to receive meaning becomes fundamental.

In the James Bond series, this capacity to understand different levels of signification is critical. Indeed, the story of espionage relies on knowledge and obfuscation of knowledge; nothing is what it seems, and yet for the films to function, literality is crucial. And so, what we get is a doubling of meaning. The many Q quips and Bond banter, even the playful humor in so many of the women's names, depend precisely on this. Pussy Galore, Holly Goodhead, Plenty O'Toole, Xenia Onatopp, Honey Rider are effective because of the immediacy of the doubled meanings. The evident tongue-in-cheek humor adds to the light-heartedness of the films but also reflects a larger dimension of irony wherein, as per Benjamin, the multiple layers of meaning allow for a critical distance and thus enhance what he, together with Theodor Adorno among others, called the social and aesthetic truth value.[2] This truth

[2] Writing about the Culture Industry of the twentieth century, Adorno claimed that not only is the subject so weakened as to be incapable of contending with the objective force of the collective, but the market has so overpowered aesthetics as to prevent any real variety to choose from (with choice and variety being central prerequisites to the autonomy of the subject). The purity of the modern collective, which thus overpowers the individual, virtually

value, based on repetition and reproduction of the multiple layers—i.e. that on-going tension between the literal and the obfuscated—is imperative for the subject to maintain a critical and autonomous stance.

A more suspect and sobering example of the possibilities of repetition is when Sean Connery's Bond disguises himself as Japanese in *You Only Live Twice*. In a notoriously simplistic grasp of Japanese culture and ethnicity, an alarming wig, some hot wax, a mock wedding, and all of two minutes' screen time, Bond is fantastically and rather ridiculously transformed. Bond, however, has the rare ability to simultaneously refer both to all that he stands for (British, Alpha-male, hero) and that which he does not, made clear when, for instance, Tiger Tanaka expresses his delight with the disguise, signalling its success and Bond's capacity to embody both layers of meaning and representation. The empty ethnic gestures are possibly redeemed by the very fabric of Bond's ethnic, ethical, and—crucially—his individual makeup (Bond being Bond and no one else, less talented). These render him capable of containing two poles of activity, poles which allow him to perform his duty and ultimately avert disaster. The simultaneity of meaning demands of the audience a double-vision, not simply to enjoy the humor evinced, but to recognize the double role of Bond himself and the critical conflict that stands at the heart of his existence. Put simply: for Bond to restore order he must eschew order, breaking civil, ethical, social—and as Q reminds us, traffic—rules

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disables that social critique which Adorno believes is essential for the truth-value of the artwork. For more on this and on the conditions for the fulfillment of truth-value see Adorno, 1998, pp. 269-322.

so that these rules may be maintained and our existence continue unshaken. (It is in fact this dichotomy and its implications on the audience that demand a critical and dynamic engagement, which precludes the complacency of blank repetition and moves the audience to a new, empowering resistance possible with reproduction.)

In the pre-Craig films, the notions of *meaning* and *knowledge* are predicated on a doubling, a simultaneity of repeated images. In the latest installments of the series, on the other hand, the validity—that simultaneity—of that doubleness is called into question. In *Casino Royale*, for example, we see Bond explicitly closes the gap between the two as he gives his name in the hotel: "James Bond. You'll find the reservation under Beech." Having just established his cover identity, he arrives and exposes himself: "If Le Chiffre is that well-connected, he knows who I am and where the money's coming from which means he's decided to play me anyway. So he's either desperate or he's overly confident but, either way, that tells me something about him." Thus, knowledge here no longer lies in the gap but in action. The possibility of knowledge becomes, again, tantalizingly challenged in the more recent *Quantum of Solace*, where the question of trust is repeatedly raised. We hear Judi Dench's M warning Bond again and again that she "needs to know she can trust him," a question we learn guides the film (and that is later echoed almost exactly when Beam, of the CIA, demands of Leiter that "we need to know you're on the team!"). Indeed, it is suspected that Bond is *not* to be trusted in this film as he betrays all that he has stood for in the trajectory of the series: his motivations are unclear; he lies to M; he does not even sleep with the

lead Bond-girl! Alluding to this seeming betrayal, M chides him, suggesting that he is so guided by his inconsolable rage that he is blinded to his loyalties; "When you can't tell your friends from your enemies, it's time to go." Par for the course in tales of espionage, the good-evil binary so straightforward in earlier Bond films has become blurred (Bond is of course often closely matched and frighteningly similar to the villain, but this impulse is always kept in check by an underlying sense of social order and duty to the Crown). Although we implicitly trust Bond—as M says, he is *our* agent—the seed of doubt is nevertheless planted with the growing number of bodies strewn in his wake. As Mathis comments, "the villains and heroes get all mixed up." The Foreign Secretary adds his voice to this doubt when he asks: "How do you know he hasn't been turned?" Similarly, his allies only serve to support this confusion. Bond is twice confined and restricted by his government in *Quantum of Solace*, each time leading him to turn elsewhere for help. The first time he turns to Mathis, who was himself taken for a villain in the earlier film. Indeed as M has calculated in her warning above, once friends and enemies become confused, he does *go*, as he is shot to death in one of the few Bond episodes where a close ally is destroyed. (We see this in *Licence to Kill*, a film closely paralleled by *Quantum*, particularly in the rogue-spy / quest-for-revenge structure; and in *On Her Majesty's Secret Service*, which conveniently ends immediately after the murder of Bond's wife, precluding the otherwise near-inevitable vengeance. There are certainly many examples when associates die, but these tend to be either women or indigenous assistants from the locations he visits—e.g.

Quarrel, Ali Karim Bey, or Sharkey, and thus, it seems, on some level expendable.) Bond's second suspension is followed by a dubious meeting with Felix Leiter. Leiter in *Quantum* is, like Bond, a puzzle; his loyalties are in question. However, the film gives clues that although Leiter appears to be an embittered and listless agent, frustrated as the underling of a bureaucrat, he is in fact fully aware of the mechanisms of power around him. The invocation to *not trust a damn thing around here* (paradoxically voiced by the slippery Beam, his boss) comes to include the image Leiter himself presents.

This double image and the questions it raises on the knowability of a person are nowhere clearer than in the scene where we—both Bond and the audience—discover the body of Agent Fields. This dramatic return to the body is of course a direct nod to *Goldfinger* and, with the certainty of recognition by the viewers of the iconic image, *Quantum of Solace* begins thus to confuse the Bondian epistemology. Where Jill Masterson had been Auric Goldfinger's accomplice and thus her death follows the familiar Bond pattern of doomed and depraved women, Agent Fields, credited as Agent *Strawberry* Fields, seems to have been innocent of any complicity or complexity. Her death is really the death of any remaining innocence in Bond's development, and her body, covered in oil, becomes a spectacle of the end of the old world order and the beginning of the new.

Permitting a small digression in my discussion, the lyrics to the famous Beatles song of the same name are pertinent here as they reflect precisely that question of knowability: "Living is easy with eyes closed, misunderstanding all you see. It's getting hard to be someone but it all works out.... Always know sometimes

think it's me, but you know I know and it's a dream." Putting the hazy psychedelics aside for the moment, if we join the pieces together we have in the unexpected death of Strawberry Fields the signal that Bond is *not* fully knowable. Penetrating her, *knowing* her, if you will (unlike Jill Masterson with whom he only had the promise of intercourse before being knocked unconscious, later to awaken next to her golden body), serves only as some existential distraction since, as M, Vesper, Leiter, and Mathis all teach him, "We never really know anyone." There are two important deaths in the film: her own and that of Mathis. Mathis presents a tragic but sloppy, bleeding, and unshaven body, and yet it is his that fully touches and literally marks Bond. His bloodied shirt serves as a reminder of Mathis' invocation for forgiveness, and it is with this ringing in his ears that he faces Fields. Her death stands in for the Benjaminian Classical auratic original—that somehow pristine body signalling an original innocence and the consequences of history, which he now must forgive or resolve. Benjamin explains that the "authenticity of a thing is the essence of all that is transmissible from its beginning, ranging from its substantive duration to its testimony to the history which it has experienced" (p. 221). That history, the absent original moment that establishes the authority of the artwork—or in this case the authority of Field's body lying prone—is Benjamin's *aura*. Like the spilled tomatoes in a barely noticeable scene in the beginning of the film, Field's perfectly still body serves as a counterpoint to the constant movement that is the key trope to *Quantum*. Indeed, her death sets Bond in motion as he resumes the last leg of his chase.

The altered trajectory of the new films revises the momentum and body of knowledge in the series. With *Casino Royale* we get instead the late invention of an antecedent original. While Bond is stripped to his bodily self in *Casino Royale*, in *Quantum of Solace* we keep delving deeper and deeper until we reach the ultimate, indivisible quantum. Let us look at the implications of this difference. In the earlier, pre-Craig films, it is this repetition, the underlying formulaic structure of the series, which teaches its audience what to expect from the films. The repeated pleasure of recognition creates an intimate response to the action on the screen as the viewers actively seek that which they know and are personally rewarded for their attentive investment. Desmond Llewellyn's recurring appearance as Q, for example, himself growing older from film to film while he repeatedly echoes the reprimand to Bond to "just grow up," suggests a continuity not only for the character but for the viewers themselves. However this is not simple replication. It is not incidental that it is this character who is repeated. Signalling the shifts in technology he introduces, Q powerfully brings each film up-to-date.

As clear from the elaborate lairs of evil made for the films, technology is truly venerated by the Bond villains who manipulate it, harness its powers, transforming their technologies to near divine greatness before being inevitably consumed and destroyed by their own inventions. Bond baddies are infamously capable of mastering the forces of nature and technology, whether they have learned the mystery of alchemy, seek to create a nuclear holocaust, or even to manipulate the force of the sun; this power is made authentic by the altars to its

power (built to an astonishing cinematic standard, set in the early films by Ken Adam) or the rituals wherein it is realized.

Casino Royale presents a new stage, shifting away from the Benjaminian repetition of this ritual-based authenticity. We do not have here the present double-meanings of the earlier films but, in a pattern reminiscent of the Benjaminian classic era, we have gaps in knowledge—*ellipses*, and the means to bridge these gaps. Bond's ability to read his surroundings, along with our concomitant ability to read him, has shifted from the double entendre to a penetrative directness. Temporarily paralysed by the *ellipsis*, the encrypted password to disaster in the first half of the film, Bond soon realizes and identifies this intentional omission, which serves to activate, or avert, the destruction of the new airplane. We can see how the move from veneration to repetition here is transformed into *penetration*: the physical body establishes new sites of knowledge and begins thus to re-enact that mysterious *aura*, eliminated in the age of reproduction.

An Auratic Quantum of Bond

To quickly review the theoretical basis I am trying to establish, it is my argument that in the bulk of the Bond series, i.e. the twenty films prior to Craig's recent two, the Benjaminian Classic structure of the ritual wherein the authenticity is established through the certainty of an original moment of creation, forever gone but ritually venerated, is supplanted by a pattern of repetition that makes the notion of an original redundant, favouring the immediacy of each new iteration. With

Casino Royale, however, the mystique of veneration is re-established and what Benjamin terms the *aura* of authenticity is restored. Significantly, as already suggested, this mystique is enacted through bodies, in general, and particularly, through the body of Bond. Indeed, Daniel Craig's Bond has been initially identified through the utter physicality of his screen presence.

We have an important change here. Bond viewers have certainly benefited from numerous glimpses of a bare chest or thigh from the earliest films, with Connery even donning the infamous short towel suit in *Goldfinger*. However, unlike these fleeting images, with Craig, the body in all its flexing, bleeding, or sweating physicality is put explicitly on display. Not unlike the spectacular moment in *Quantum of Solace*, where we see Agent Fields doubling in for Jill Masterson, here it is Craig who stands in the place of the unforgettable Ursula Andress and her contemporary counterpart Halle Berry. In both scenes, the image of the body momentarily stops the action before immediately pushing it forward again. Here it is Craig who emerges from the water and stands sparkling in the sun. The narrative flow momentarily breaks as Craig stops on-screen to allow us to gaze at him, and it is he who becomes the image of Botticelli's Venus emerging from the water, not unlike Eros himself, standing for love, beauty, and fertility. Thus, it is through an erotics of the body that Craig's Bond begins to rewrite the possibilities and the strictures of masculinity.

Both Berry's Jinx and Andress's Honey Rider are framed and fixed by Bond's gaze. The women are, as far as they know, alone; the viewer is aligned with the voyeuristic Bond who promptly proceeds to seduce

them. In *Casino Royale*, on the other hand, the camera begins by directing our attention to the object of Bond's gaze: Solange Dimitrios. Only then are the viewers allowed to see Bond; he himself keeps his gaze fixed on her, thus shifting the prime focus of the scene from his own body onto that of the woman. The woman, meantime, is fixed to the spot by the surrounding eyes of the staring children, those of the glistening, watchful Bond, and by the ominous stare of her sinister husband. She, in turn, moves her eyes to Bond, before finally returning home. So, where in the previous films there is a narrative break that concentrates on the body of the woman, in *Casino Royale* we have a system of gazes and objects creating a moving centre of attention.

Rather than capturing its object, this moving gaze identifies Bond as both a subject and a man, and focuses on the erotic mystique of his body, calling to mind Judith Butler's paradigm of performativity, whereby gendered identities are established and rehearsed through a performed citation of the structures of masculinity or femininity. The body becomes the site of on-going citation of these structures—"a constructed identity, a performative accomplishment which the mundane social audience, including the actors themselves, come to believe and to perform in the mode of belief" (1990, p. 272). This process is inherently socially formulated and social-forming (and thus *sighted*, to complete the homophonic structure introduced above). In Butler's words, "the body becomes its gender through a series of acts which are renewed, revised, and consolidated through time" (p.274). Thus, Bond's maleness is established because he literally embodies and repeats these structures in a

way recognizable by the gaze of an other. Citation, according to Judith Butler, is fundamental as it simultaneously confirms normative categories as well as pointing to their fragility. Referring to the possible empowerment inherent to this configuration, Butler goes on to observe that "[i]f the ground of gender identity is the stylized repetition of acts through time, and not a seemingly seamless identity, then the possibilities of gender transformation are to be found in the arbitrary relation between such acts, in the possibility of a different sort of repeating, in the breaking or subversive repetition of that style" (p. 272). As the categories of gender and sex must be forever embodied and verbalized, it is then an *articulated*, *penetrable* (that is, not whole) body that becomes definitive (rather than the impossible object totality of earlier models).

This dynamic, open system of observation, the penetrative focus, and the penetrated body change the locus of knowledge and meaning (technologies of surveillance and scrutiny become agents of political and social aims). Following from Martin Willis's powerful argument (2003), we see that as the technological advancements are traced throughout the 007 series, technology gradually becomes more and more personalized and intimate. Until *Casino Royale*, however, the technology has always remained external to Bond himself. This is exactly what differentiates him from the villains, in fact, as they are so often grotesquely penetrated by the destructive technology they have propagated. Bond, on the other hand, staves off this penetration and turns instead and inevitably to a more reassuring sexual penetration (reassuring in that it is both more natural as the boundaries of his body have not

been violated, and—importantly—because it reasserts precisely that heteronormative masculinity which had been explicitly or implicitly threatened by the *unnatural* villain). With *Casino Royale* we get a somewhat different use of technology.

In this film, when technology moves beneath the skin rather than remaining on its surface, it is designed to serve the good guys, as we can see when M has a tracking device inserted into Bond's arm. As powers of surveillance no longer remain external to Bond's body, a hierarchy of power and its manifestation as technology, body, and knowledge become evident. We are reminded that this Bond is still maturing, still wavering and faltering between the 'half monk half hit-man' binary which M describes. Technology has become a physical object that literally grounds him as he becomes the object under constant supervision. The association of technology to knowledge and thence to life is such that even upon being poisoned he is able—through remote satellite readings of his vital signs, transmitted through a needle inserted into his vein—to survive an attack which should have killed him. The technologically penetrated body becomes more than human; and yet, importantly, his survival is only finally enabled through the aid of an other, with the well-timed arrival of Vesper Lynd.

This link with an *other* (significantly, a gendered *other*) is thematically developed through the over-stated romance scenes on one hand and through the erotics on the other—particularly, the erotics of torture. In each type of relational framework, the power of the relation to an other is premised on a mystery of the unknowable: the *erotic* is founded on a mystery, a space for lack of knowledge, which is based on the body, where *romance*

is founded on a mystery, a space for the unknown, that is based on the metaphoric heart. Thus Bond is both unknowable and knowable, mysterious and material. The body's ultimate truths, however, become manifest in its response to the *other*.

At the heart of erotica lies desire, a longing that signals absence. In the notorious torture scene, Bond's body is put on display. This spectacle is enhanced by the direct threat to his masculinity and his nearly inhuman ability to endure the pain. Stripped naked, what we imagine will expose his vulnerability actually enhances his strength. In an unambiguously erotic scene, Le Chiffre begins by suggestively slinging the flaccid rope-whip over Bond's shoulder as he admires his physique in a whisper to his ear. It is Le Chiffre, sweating under the strain of whipping Bond's bare genitals, whose calm begins to crumble as he tries unsuccessfully to penetrate Bond's resolve. Presumably having taken complete possession of Bond, reducing him dramatically to a knowable body through the sadism (which relies precisely on the narrative of power and submission), Le Chiffre is frustrated as the knowledge evades him.

Tellingly, his own name translates from French as "the cypher," "the figure," or "the number." He is a stand-in variable, a system of encoding that signifies meaning, but meaning that remains undecipherable and absent. Unlike the materiality of Bond, which surpasses human limitations, and one that has become penetrable but only within bounds and under control, with Le Chiffre we have an open body, a body whose limits are vague and undetermined: as when blood wells from his eye or when he requires an inhaler to assist his breathing.

In both the film and the novel, the character of Le Chiffre is a slippery one. His is the exact opposite of Bond's restorative physicality and the empowering (erotic) mystery his body entails. The erotics of the torture scene are reflected in the magnified romantic elements of *Casino Royale*. The film presents an unprecedented glimpse into the heart of our hero, a sight filtered through extended scenes of romantic platitudes. The very use of formulaic structures (as in the Venetian gondola, the intimate conversation on the beach, or the love-making scene in the clinic) is telling of the filmmakers' own acknowledgment of the possibilities but also the burdens of tradition. They effectively indicate to their viewers, if rather crudely, that this love is the love of fairy tales and ideals. A love we then begin to suspect cannot be possible.

Casino Royale begins then to re-build a critical role for both the materiality and the mystery of the fully physical body. This tension between the intangible (that mystery) and the tangible (the body) poses a revised version of Benjamin's classical aura. Benjamin describes the aura as resonating with the remaining echoes of a near-mystical inspiration and art, which forever gestures towards a single moment of creative origin. In the film, it is that relation to the other (either via an erotics of torture or of romance) which safeguards the mystery and restores the aura of the body. It is important to note that the reconciliation between the two realms is caught up in the matrix of gender relations that Judith Butler tells us is "prior to the emergence of the human. This process humanises the subject" (1993, p. 7). In other words, Butler proposes a revised "return to the notion of matter, not as site or surface," as indeed we

have seen Bond's body now has depth as it too is penetrated, "but as *a process of materialization that stabilizes over time to produce the effect of boundary, fixity, and surface we call matter*" (p. 9, emphasis in the original). In *Quantum of Solace* the auratic penetrated body has become—in an eerie reflection of Butler's own definition—a process of materialization. From its opening fragmented car chase through the shattering panes of glass and smashed ashtrays to the disintegrating plane, the exploding hotel, and even finally the falling snow and the partially hidden, dropped necklace in the last scene, the film is riddled with images of bodies in motion, fragmented, and shattered. The penetration of *Casino Royale* is transformed here to the infinitesimally moving, ungraspable particle. This is demonstrated through the cinematic aesthetics in scenes that contrast movement with stasis—as for example, in the opening scene already mentioned with the spilled tomatoes or just after when the woman is incongruously shot during the horse race. It is interesting to note that in the film, *quantum* is much more than the body of Bond: it is the core of villainy threatening the world order. Far from standing as a contrast to my reading, this only serves to enhance the position of this film within the series. Following from the manufactured moment of origin of *Casino Royale*, *Quantum* subtly pursues a new trajectory of beginnings wherein Bond is still coming to his own. It is not coincidental that it is in this film that Bond's loyalties are challenged, and indeed it is here where he makes a choice to become a quantum of evil or to be satisfied with that quantum of solace.

Reading Judith Butler alongside Walter Benjamin and across the series of James Bond presents a new

model wherein the role of the body, its authenticity and its authority are dramatically revised. Where in the first Craig film we get the spectacle of his body as it repeats structures of masculinity, penetrated by technology, in *Quantum* the site of citation is endlessly shifted onto mirroring planes. In this later film, Bond's identity is perhaps reflected through the Quantum of evil, reflected off of Mathieu Amalric's sinister every-man villain, but it is primarily realized through his relationship with Camille. For the first time in twenty-two films, Bond has an intimate and utterly platonic relationship with a woman. In the many mirroring surfaces of the film, Camille is very like Bond at this point, a rogue agent who uses sexuality to pursue a personal agenda, learning how to be herself as Bond teaches her to "aim, and make it count." And yet, despite the sexuality of her actions, she is curiously asexual, almost childish or even boyish in her physique. Even the spontaneous closing kiss as they part feels chaste and unthreatening as Bond seemingly says goodbye to that part of himself. She has become the image of him; it is her gunshot to Medrano's heart that allows him to pull Greene back from the fire and to turn Yusef Kabira in to the authorities. Moreover, as Camille huddles paralyzed in the growing flames, we are reminded of Vesper shuddering in the shower. Where Vesper had witnessed the killer in Bond, Camille has herself become the killer, and Bond is thus spared of the kill himself. Moreover, the scar on her back, the body's memory of the trauma, pain, and violence that motivate her, restores the scar absent from Bond's perfect cinematic body—though ever-present in Fleming's depictions.

Daniel Craig's Bond in the two newest additions to the series inscribes new possibilities for Benjamin's aura, reconfiguring structures of masculinity and technology and through these the narratives of history and the role of art, that are so crucial if a twenty-first century Bond is to remain relevant. We no longer have the venerated impenetrable whole body envisioned by Benjamin. Nor does the authority of the body rely solely on a pattern of repetition emptied of all origins. Instead, we have arrived at a new configuration of aura and authenticity that are based on the body as language and process, as well as matter and motion. The very body of Bond has become a contested site of action and of storytelling, displaced onto mirroring bodies around him only to ultimately reject the temptation of evil or chaos and reaffirm his own authority as the spy who loves us.

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Science is Culture: Conversations at the New Intersection of Science + Society.

Adam Bly (editor)

New York: HarperCollins Publishers, 2010. 368 pages. ISBN: 978-0-06-183654-1 (paper). $15.99.

Reviewed by Eric Nay, Associate Dean and Associate Professor, OCAD University, Toronto, Ontario, CANADA

Adam Bly created the online magazine, *Seed*, as well as other websites and innovative means of exchanging information under the umbrella of the Seed Media Group, all of which help to foster an emerging "twenty-first century scientific renaissance" that is intimately tied to the communication revolution, globalization, and technological innovation. His 2010 text, *Science is Culture: Conversations at the New Intersection of Science + Society,* has been translated into Spanish, Korean, Turkish, and Mandarin and serves as a creative example of a new kind of text that reads as part blog, part celebrity interview, and part academic reality show. His virtual on-site locations for these salon discussions create meetings of minds that combine the virtual campuses of Harvard, MIT, and other key institutions with the studios of creative and innovative

thinkers and doers that abandon their disciplinarily defined roles and titles to cover broad and often unresolvable topics. Curious interdisciplinary thinkers like Noam Chomsky, Steven Pinker, and Tom Wolfe are among the forty-four participants chosen by Bly to postulate and contextualize major issues with science and scientific thought as a strong and present subtext. Some are futurists. Some are historians. Some are at the tail end of a remarkable career and others are just finding their place. The book reads like the classic cocktail party trick of imagining your fantasy dinner party and whom you would invite. The pairings of thinkers end up working themselves out in curious ways. It's a brave exercise that Bly has created.

Science is Culture: Conversations at the New Intersection of Science + Society is also a very timely work as a genre or medium that teeters between the fleetingness of a screen capture and a prolonged philosophical debate. It is a format in which the actors may shift and be replaced at any moment by equally fascinating understudies who pick up the tail ends of a conversation to take it to a very different location. The text feels like reading a blog, but with a clear thesis and, of course, a highly edited outcome. The discussions are short, intense, and structured around a question, but also with an appreciation of a spirit of inquiry for inquiry's sake. In this sense the text becomes a new model for an old school philosophical debate. The themes and topics of discussions are reminiscent of similar web-texts such as Worldchanging's 2006 text, *Worldchanging: A User's Guide for the 21st Century*, published by Harry N. Abrams, Inc. However, Bly's text is leaner, meaner, and more precisely edited.

Adam Bly's version of this new web-text genre is particularly interesting, and his role in this text is much more than editor and more of curator whose intent is to keep the spirit of the salon and blogging alive in the transcription. Bly's reputation and background are built upon his online magazine, *Seed*, which represents a new type of science magazine intent upon raising and modernizing scientific literacy and exploring new means of communicating ideas that is deliberately positioned as something that is not a traditional scientific journal. *Seed* has been described as potentially doing for scientific thought what *Rolling Stone* did for popular music. Under Bly's leadership, *Seed* has earned acclaim for bridging ideological and cultural divides between science and society, and in this text, Bly invites key players from the creative industries like art, architecture, and game design to join theoretical physicists and mathematicians, among others, to debate key issues facing mankind.

This text is a record of some of the key conversations held as part of the *Seed*/MoMA Salon, a monthly gathering of scientists, architects, and designers that helped to lay the foundation for *Design and the Elastic Mind*, the ground-breaking exhibition about science and design at The Museum of Modern Art, curated by Paola Antonelli. As the MOMA website states, "*Design and the Elastic Mind* is a survey of the latest developments in the field. It focuses on designers' ability to grasp momentous changes in technology, science, and social mores, changes that will demand or reflect major adjustments in human behavior, and convert them into objects and systems that people understand and use." The *Design and the Elastic Mind*

Exhibition used scientific and technological reframing to suggest an empowerment of design and designers to help envision a brave new world and redefine what disciplines like art and science can do in alignment to facilitate the "massive change" that Bruce Mau and others have advocated for as of late, but have not successfully been able to demonstrate through real life case studies that are in the marketplace, in laboratories, and shaping our world today, even if we cannot see these changes because they exist at the nanoscale or are reduced to streaming digital bits.

In this unique and very readable text, Bly uses conversations between pairings of architects, artists, dancers, designers, and other creative industry pioneers with influential academics and thinkers located in theoretical physics, biology, mathematics, and other traditional hard sciences as a way to ponder life's largest unanswerable questions in the quest for a new way of looking at the world that may "blur the lines between scientific disciplines and the borders between the arts and humanities." His framing of each of these discussions is subtle, but effective. The pairings themselves often become worthy of discussion and elicit questions about everything from disciplinary boundaries to the value of academic and professional credentials. All are seemingly equal in Bly's salon model. This is in itself a challenging concept.

In one of the most endearing discussions Bly pairs Paola Antonelli, the senior curator of architecture and design at the MOMA in Manhattan and curator of the groundbreaking *Design and the Elastic Mind* Show, mentioned earlier, with Benoit Mandelbrot, the "father" of fractal geometry and Sterling Professor Emeritus at

Yale University. The conversation Bly records, while focused on fractal architecture and the death of Euclidian geometry, veers towards a more humanistic thesis by way of a casual conversation that serves as a successful model for how these conversations have been structured and turn out.

In the conversation between Antonelli and Mandelbrot, Antonelli's admission that she wrote her architectural thesis in Milan on Mandelbrot's work over eighteen years ago but has never before met him in the flesh becomes the entry point into a more profound conversation. In her architectural thesis Antonelli analyzed key deconstructivist architectural practices like that of Coop Himmelblau in Austria that went beyond the limitations of conventional Euclidian representation and conventional construction to describe innovative and challenging structures that could only be realized through three dimensional modeling, drawing parallels with Mandelbrot's fractal geometry that Euclidian geometry could not describe. Both fractal geometry and the architecture of Coop Himmelblau required an altogether new scientific means of representing, describing, and defining structures that could only be described by using Mandlebrot's work, if not literally at least metaphorically. The intersection between science and art in this example becomes quite clear.

The ensuing discussion after this revelation locates itself around needs for other new ways of understanding visuality, mathematics, and space and brings up key failures across existing educational structures that are seen to prevent interdisciplinary and speculative thinking by suppressing both science and art as potential mates. Antonelli's discussion heads towards

mathematics, and Mandelbrot begins talking about art in his responses. The two conversationalists switch disciplines liberally as the discussion continues. The disciplinary boundaries seem to melt away as each begins drawing from their deeper understanding of the world and their own fundamental curiosity, including curiosity about how the other thinks, solves problems, and what the world needs to understand key problems. Each of the twenty-two conversations recorded in this text becomes most useful when a key expert begins talking about the subject matter that is not within his or her disciplinary area, but rather his or her partner's. The collaboration of ideas and merging of points of view becomes a model for the broadly humanistic approach to the biggest problems and questions facing us today, which the text and *Seed* are suggesting is needed for a scientific renaissance to be fully realized. Mandelbrot reminds Antonelli that fractal geometry, as a mathematical theory, emerged from Mandelbrot's use of drawing and his needs for visualizing complex three-dimensional problems. Mandelbrot used artistic methods like drawing as research to solve what mathematical modeling could not solve to arrive at an entirely new way of conceiving phenomena that could not be described using Euclidian geometry. Both Antonelli and Mandelbrot agreed, in the end, that important alignments in art and science are just starting to occur, as is our capacity to conceptualize problems that we do not have the tools to describe. The discussion concluded with a very clear indication that we may indeed be on the verge of a scientific renaissance, as the book's overall theme argues.

Other clever and intriguing conversations continue

to pair one scientist with one non-scientist to explore a range of ideas that include evolutionary philosophy, time, and other questions that range from the simply curious to the imponderable like, "What is human?" The heavyweight scholars hail from Harvard, MIT, Cornell, Yale, and McGill, while the creative voices include key figures like Paola Antonelli from the MOMA in New York to the inventor of *The Sims* video game, Will Wright. In the end the most unlikely pairings become the most pleasurable to read. The fantasy dinner parties created through these discussions each have their own individual magic as a result.

The text does present ample and convincing evidence from nearly every corner of the Western intellectual world that we are indeed on the brink of a scientific renaissance, and also presents an equally enjoyable and intellectually stimulating read for anybody who is curious about how the liberal arts and humanities might be able to survive and even thrive on our campuses from a more utilitarian perspective. I have cited this text in white papers myself specifically for its message about the importance of a broadly liberal education in the arts, the sciences, and in my area, the design professions, to help the next generation conceptualize which problems are worth solving.

In a related essay, "Points of Convergence: Law, Mystery, and the Humanities" in *Law, Mystery, and the Humanities, Collected Essays*, the "mystery" of the "unresolvable" questions that generate speculative thought and how these questions relate to law as a discipline with a focus on interdisciplinarity and the humanities in particular for the reframing of legal thought today is the question that is posed. The opening

question in this essay is misleadingly simple, "The chicken or the egg, which came first?" It is now understood to be the egg. We know this because the hard science of evolutionary genetics has solved this for us. Mystery solved. Now that this classic hypothetical has been solved, we are left with nothing to ponder. Maybe we do not need to solve everything? Or maybe we do not need questions that we can solve? Knowing the answer and solving this problem presents a problem for us as a species.

We need alternative ways of maintaining such dilemmas, and these hypotheses lie in the practices, theories, and methodologies we may find in the humanities, arts, and social sciences and the convergence of science and culture as Bly's text infers. These forty-four contemporary thinkers, in less than 350 pages of text, may have just given us the blueprint for the scientific renaissance that Bly is convinced is upon us already. I prefer so to think of this text like a new version of *The Whole Earth Catalog* or, better yet, *The Hitchhiker's Guide to the Galaxy. Science is Culture: Conversations at the New Intersection of Science + Society* is an essential narrative captured from the blogosphere that may help us understand how we can all come together under the umbrella of humanistic and scientific inquiry to arrive at altogether new questions that we may never believe we can ever answer.

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Leonardo to the Internet: Technology and Culture from the Renaissance to the Present, 2nd Edition.

Thomas Misa (author)

Baltimore: The Johns Hopkins University Press, 2011.
400 pages. ISBN: 1421401533 (paper). $25.00.

Reviewed by Mario Fenyo, Bowie State University

Thomas Misa's recent book is part of a series titled Johns Hopkins Studies in the History of Technology, edited by Merritt Roe Smith. In fact, his book could almost be analogous to the entire series, given the time frame—the history of modern Europe—and the range of topics covered. It is an impressive blend of commonly known and little known historical facts. Of course, which of the facts is commonly known depends to a large extent on the person perusing the book. This reviewer acknowledges and gratefully confesses that many of the most interesting details were unfamiliar.

Indeed, understanding and explaining the various technologies strikes me as a major accomplishment in itself. Since I have been described occasionally as "technologically challenged," yet I had no trouble at all in following Misa' s arguments, the author deserves full credit for making complex arguments at the intersection of several disciplines readily accessible. In other words,

this work is written for the general reader, the student of history, and any student at all. Moreover, it raises issues pertaining to what can be described as philosophy of history, history at the deepest level.

The book is divided into ten chapters, with descriptive titles such as "Technologies of the Court, 1450-16" (Leonardo was born in 1452); "Techniques of Commerce, 1588-1740"; "Geographies of Industry, 1740-1851"; "Instruments of Empire, 1840-1914"; "Science and Systems, 1870-1930"; "Materials of Modernism, 1900-1950"; "The Means of Destruction, 1936-1990"; "Toward Global Culture, 1970-2001"; "Paths to Insecurity, 2001-2010"; and the concluding chapter, entitled "The Question of Technology." Indeed, Misa is a historian by profession, which is one way to justify the chronological approach. There are overlaps in most of the topics and chapters.

Just to provide a sample or two of the specific topics covered in a given chapter, let us examine the one on imperialism, Chapter 4, entitled "Instruments of Empire," which uses illustrations taken mostly from the history of the British Empire. The author does not fail to note that, paradoxically, the second industrial revolution," which coincides in time with the apogee of the British Empire, can be credited to German and American (i.e. the United States) advances rather than British technology. Yet British domination is incontrovertible; it is no accident that the mapmakers of Great Britain, as well as the cartographers and printers of any European country reserved the color red (more exactly, pink) to denote the expanse of British possessions (p. 108). That color code has remained true to this day.

The same chapter offers interesting and somewhat lurid details on mutiny in India—the term Sepoy is not used (p. 107 ff). It also mentions several other imperial campaigns on the Asian subcontinent as well as those against the Chinese. Controversial as it may sound, the analysis confirms what many of us already know, that British imperialism in India (and Africa, I might add) did not generate wealth for the "mother country," let alone the colonies, but shifted wealth from the taxpayers in India and Britain "to wealthy traders, investors, military offices" etc. in Great Britain (pp. 98-99). The chapter offers some technological details about the value of the British steamer in Burma (Myanmar), as opposed to the Burmese *praus*, "a speedy wooden craft" (p. 100), and about the general benefits of steamers to British commerce. Oftentimes, the steamer was a gunboat, as in the case of the exploits of *Nemesis* at the start of the Opium War (p. 103). The chapter also retells the generally known story of the "French-funded, Egyptian-built" (p. 100) Suez Canal, which led to Britain's annexation of Egypt and, indirectly, to the takeover of Sudan.

There is a segment on the telegraph lines, built in advance of the railroad lines, both of which were intended to facilitate military reaction to any "political activity," particularly in India, to benefit the British occupation force, as well as in the American West (p. 106). There is, not surprisingly, a section on "railway imperialism" (p.112 ff) with a picture showing Cecil Rhodes "standing astride across the continent of Africa" and his dream of a Cape Town to Cairo line. Incidentally, an Act of Parliament from 1846 set the gauge of railroad lines not just for England, but for the

globe. Misa explains in a subsequent chapter why Russia became an exception by opting for a different gauge—apparently in order to remain safe from British invasion. Lest we focus on the British, which Misa does not, the reader is told, courtesy of a quote from the *Omaha Weekly Herald*, that half a million dollars (at the contemporary rate) had to be expended for each Indian killed during the construction of the transcontinental railroad lines (p.119). There is not much evidence that the Native American population was dead set on preventing incursion by train.

Perhaps "closer to home"—both in terms of contemporary history and in terms of personal experiences—I reread chapter 7, titled "Means of Destruction." Here Misa argues that it was in this period, beginning before World War II to the end of the Cold War, that much technology was a by-product of military effort, more so than in the age of Leonardo and other engineers (i.e., the Renaissance). The Great War also had its technological aspects, including weaponry such as poison gas, aircraft, submarines, machine guns, but these were not new (except for the so critical contribution of the tank), yet what was new was not the particular weapons, but mass production. Indeed, the mid-twentieth century and the 1960s constitute the era of the "military industrial complex" to use President Eisenhower's terms, or "Pentagon capitalism," to use Seymour Melman's evocative terminology.

Misa devotes a few pages to the technology of the Nazi German Blitzkriegs, but blames the Nazi leadership for undercutting other technologies that could have led to their success in the last two years of the war: the development of the jet engine and the atomic bomb. The

Nazi leadership undercut the budget for these ventures and, in the case of the Jews, chased away much of the scientific personnel who may have brought these ventures to fruition had they remained in Germany. So many of the most distinguished scientists on the Manhattan Project and other projects ended up in the United States as refugees from anti-Semitic persecution, including the persecution of Christians of Jewish descent, in Germany and elsewhere.

The United States, as it turns out, managed the funds far better—in other words, far more destructively. Misa devotes fourteen pages (pp.196-210) to the Manhattan Project. He notes that the debate about the dropping of the bomb on Hiroshima has yet to be resolved, but he has no doubt that the bomb on Nagasaki (the result of a different technology, see p. 204) was superfluous, not meant to bring the war to an end sooner, but designed to warn the Soviets and to deflect criticism about the budget back home in the United States. He also mentions that Albert Einstein and Leo Szilard personally warned the American president (Franklin D. Roosevelt) about nuclear devastation. While Harry Truman has been blamed or praised for giving the orders to drop the bombs, what may be less well known is that even he expressed regret at the Japanese children killed.

Although Misa's book might serve as a textbook, or as an auxiliary text, not only in the history of technology, but in a history of technology in interaction with social and political history, it is not comprehensive. For instance, although Germany at the end of WWII is discussed, there is nothing about V1 or V2, the rocket technology that led to medium and long-range missiles and space travel. Misa does not delve into the technology

of the jet aircraft, the subsonic or supersonic aircraft. Or, in regard to the technology of everyday life, there is nothing on zippers (or buttons for that matter), on phosphorous matches, on visual instruments beginning with eye-glasses, on the telescope (except in connection with Galileo), on the camera, on television, on the preservation of foods and canning, on pharmaceuticals, antibiotics, biotechnology, nanotechnology, etc. In other words, there is room for at least another volume with the same title.

Misa's work is unapologetic about its Eurocentric focus, yet it does not deny or reject the contributions of other technologically advanced civilizations. Chinese civilization and Arab science are acknowledged in almost every chapter. Thus, the Chinese movable type, we are told, anticipated Gutenberg not by a few decades, but by five hundred years. In the concluding chapter, Misa refers to Michael Adas (*Machines as the Measure of Men)* on how Europeans came to believe and profess their illusions about their cultural superiority over Africa, India, and China. Whereas Europeans had been curious and respectful until the 18th century, "they became increasingly chauvinistic during the course of industrialization in the 19th century" (pp. 316-17). European industrial and military expansion finally convinced the rulers of China and others that they did not have all the answers.

One of my favorite pastimes is to look for and find typographical errors and discrepancies, and I found some in Misa's book. How did Korean characters spread to China (p. 20)? Chinese ideographs originated millennia ago, while the Korean alphabet is about five hundred years old. There was no Budapest in the 15th or 16th

centuries (p. 22). In 1874, Austria was part of the Austro-Hungarian Monarchy or Empire, notwithstanding the labels on the map reprinted in the book, on page 109. Misa seems in a hurry to defeat Hitler and the *Wehrmacht* of Nazi Germany, for he moves up the battle of Stalingrad (the "turning of the tide," in Churchill's account) by a whole year, to the winter of 1941-42 (p. 194). Indeed, the German army did stall in the winter of 1941-42, but that was in the vicinity of Moscow rather than the Volga. Dates don't always matter, but in this case it amounts to rewriting the history of World War II, and casts doubt on the accuracy of many details I have taken for granted.

Nevertheless, Misa's book is satisfying. The point of any publication, in my estimation, is to be read, to spread ideas, to add to the existing body of knowledge. These objectives can be met far more easily if the writing is interesting enough to hold the attention of many readers for an extended period. Misa's work is, first of all, a good read.

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The Net Delusion: The Dark Side of Internet Freedom

Evgeny Morozov (author)

New York: Public Affairs, 2012. 448 pages. ISBN: 1610391063 (paper). $16.99.

Reviewed by George Sochan, Bowie State University

Not too long ago, beginning in late 2010, the term "the Arab Spring" was used to describe dramatic events and sweeping political changes that occurred in North Africa. About the time of the first regime change, which occurred in Tunisia, Evgeny Morozov was completing his book, which opens with "thousands of young Iranians" taking to the streets with smartphones and other electronic devices. This episode, which was greeted with optimistic euphoria in western states, occurred in June 2009 and was called "The Twitter Revolution" (pp.1-4). Through more than 300 pages of text, Morozov's *The Net Delusion: The Dark Side of Internet Freedom* is an unrelenting attack on the notion that the use of modern technology, especially the Internet, will readily result in positive benefits for humanity. In chapter after chapter he argues that democracy is not necessarily the political outcome of social networking on the Internet.

In the book's introduction Morozov presents two notions: cyber-utopianism and Internet-centrism. The former is the belief in the capacity of online communication to achieve freedom. The assumption is, according to Morozov, that if tweeting will trigger community activism in Seattle, it must also work in Shanghai and Teheran and Moscow and other cities dominated by authoritarian regimes. Unlike cyber-utopianism, Internet-centrism is not a belief; rather, it is an approach to gain certain desired ends like democracy and a liberal society. According to Morozov, this methodology centralizes all approaches to attain the desired ends through technology, as if the political context is only of a minor importance. Internet-centrism prioritizes the tool over the cultural environment so the presumption is that technology can achieve whatever is wanted. Taken together, the flawed set of assumptions that is cyber-utopianism carried out in the crippled methodology that is Internet-centrism creates the misapprehension that online technology will foster a liberal revolution rather than bolster a dictatorship. Morozov labels this mistake "the Net Delusion" (p. xvii). Through the next eleven chapters he develops a strong argument supporting his assessment that freedom on the Internet often has a dark, undesired outcome.

In the book's second chapter, entitled "Texting Like It's 1989," Morozov reveals the basis of many westerners' cyber-utopianism. He begins the chapter by referencing a speech made by Secretary of State Hillary Clinton at Newseum on January 21, 2010. Using Cold War rhetoric, Clinton linked developments in the early twenty-first century with those of the late 1980s. She stated that "a new information curtain is descending

across much of the world…viral videos and blog posts are becoming the samizdat of our day" (p. 35). She asserted that "information freedom supports the peace and security that provide a foundation for global progress" (p. 34). Upon that assumption, the secretary of state erected her conclusion: "We need to put these tools [Facebook, Twitter, etc.] in the hands of people around the world who will use them to advance democracy and human rights" (p. 34). Morozov refers to this resolute confidence in the efficacy of technology as "the Google Doctrine," and uses this term as the title of the opening chapter, where he begins to analyze the deluded faith in cyber-utopianism and Internet-centrism. In contrast to Clinton, Morozov sees a vast difference between bloggers and the Soviet dissidents of the 1980s. Whereas purveyors of samizdat in the USSR became vitally engaged in clandestine, anti-government activities, Morozov claims that the more typical engagement on Facebook involves posting an opinion that may only be thirty words. He argues that social networking, wherein one can pontificate about almost anything and build an enormous community of web friends, is for persons with a narcissistic spirit, and such a spirit, according to Morozov, is not one that is capable of toppling authoritarian regimes. Persons in virtual communities are more adept at signing a petition, which may take all of thirty seconds to do, than in providing real money for a cause, such as Saving the Children of Africa (p. 190).

Morozov's view that Internet activity often involves very little actual commitment is driven home in chapter seven, which is his most philosophical. This chapter is entitled "Why Kierkegaard Hates

Slacktivism." Morozov believes that Soren Kierkegaard "lived in interesting times not entirely unlike our own," and the essential similarity of importance for his argument about communication is that the newspaper in Kierkegaard's day is comparable with the Internet in ours (p. 184). Kierkegaard loathed the "absolutely demoralizing existence of the daily press" because the newspaper seemed to force people to have opinions on many topics, and many of these opinionated persons would chatter about their views in the coffee houses without actually engaging in any authentic action. Morozov asserts that the Internet combines the coffee house with today's endless cycle of news because the opinionated person can sit comfortably in his own high-tech room with a coffee mug near the computer mouse while engaging his so-called Facebook friends in virtual dialogue without much more commitment to a given issue than pressing the send button. Morozov castigates such digital activism as "slactivism." This term means persons are pressing their blogs on world issues and assuming that "given enough tweets, the world's problems are solvable." He concludes: "The problem with political activism facilitated by social networking sites is that much of it happens for reasons that have nothing to do with one's commitment to ideas and politics in general, but rather to impress one's friends" (p. 186). Morozov's relentless criticisms of the Tweeters and the Facebook friends strongly suggests that online communication is for shallow persons acting superficially. He sums up his censure by stating that photos of animals, like the now famous image of the cat flushing the toilet, are more at home on the Internet than images of oppressed persons being crushed by dictators.

That millions, even tens of millions, of persons participating in online communication engage in it more for non-political reasons than political ones can be used to the advantage of authoritarian governments. Chapter Three, entitled "Orwell's Favorite Lolcat," opens with a succinct account of a Russian Internet show called "The Tits Show." Morozov states that "a horny and slightly overweight young man travels around Moscow nightclubs in search of perfect breasts" (p. 57). While the show, which is supported by the Kremlin and sponsored by Russia.ru, conducts an occasional political interview, these are superficial. The point of this show and others like them is to distract Russians from political engagement. Authoritarian leaders, like Vladimir Putin, have found that Internet freedom creates depoliticalization. The irony is that the liberalization of certain institutions, like the Internet, has inhibited democracy while reinforcing authoritarianism. Perhaps it will surprise many, but Hugo Chavez has a Twitter account. In one month's time the authoritarian president had 500,000 followers. Unlike his presence at a podium, where the Venezuelan president may deliver a long harangue filled with heated rhetoric, the tweeting Chavez is disarmingly and succinctly polite. He charms tweeters with short statements like "Hello Mariana, the truth is I'm an anti-dictator, and I love my beautiful Mexico" (p. 114). As Morozov conveys it, Chavez's use of Twitter is similar to photographs of Joseph Stalin with children on his lap and President Franklin Roosevelt's talks on the radio to connect with Americans in a warm way. However, the advantage of Twitter over the photos of a dictator and the fireside

chats of a U.S. president is that the modern technology is two-way and seemingly provides a community, no matter how superficial it may be. In the end the importance of using online communication is that it can disengage people from democratic activism.

In the chapter "Orwell's Favorite Lolcat," Morozov cites a study done by two German academics on East Germans during the 1970s and the 1980s. Their conclusion in "Opium for the Masses: How Foreign Media Can Stabilize Authoritarian Regimes" is that the more politically disenchanted East Germans were those who had the least access to western TV programs. The East Germans who could receive television programs from West Germany were more interested in the virtual world of characters on shows like *Dallas* and *Bonanza* than they were in the lives of real persons actually living in the world. The two German academics concluded that the virtual world of television provided an escape from their dreary existence and, thereby, made the oppressive Communist government more bearable. Meanwhile, those East Germans who did not have access to western programs were much less tolerant of the government and more politically active. Morozov concludes: "Whatever external pressures, most people eventually find a way to accustom themselves to the most brutal political realities, whether by means of television, art, or sex" (p. 66). He supports this conclusion with evidence of life in contemporary authoritarian regimes, which had liberalized access to the Internet. For example, tens of millions of persons in China have the freedom to surf the Internet "to buy TVs with the biggest screens in the world," to purchase "books on how to get your kids into Harvard," and to have "sex with [persons] they met on

the Web" (pp. 68-70). The reasoning of the governmental leaders apparently is that persons distracted by consumerism and sex are less apt to confront them politically.

Apparently, people in authoritarian societies are living in some version of Aldous Huxley's *Brave New World* wherein the government maintains social control through liberal doses of drugs, commodities, entertainment, and sex. For instance, "the extremely restrictive Burmese government permits—and sometimes even funds—hip-hop performances around the country" (p. 80). However, George Orwell's harsh vision of life in an authoritarian regime is not archaic. In *1984* technology was used to exert control over people. In Orwell's book the TV was used to provide surveillance; and according to Morozov, today the Internet is used for this same purpose. Morozov notes that dictators "are usually active consumers and producers of information" (pp. 90-91). Instead of bugging a room with a microphone, agents of an authoritarian regime can acquire (consume) information by reading emails and blogs. In fact, they do not have to read all the words in the post but can just make a search for key words, like "democracy," "human rights," and "public protest." The social networking, which occurs so readily on the Internet, enables these agents to discover associates of persons who are under surveillance for political reasons. In regards to producing information, authoritarian governments pay regime supporters to submit posts favorable to the leadership. These persons do this under an ID that does not identify them as someone connected to the government. (Such blogging apparently occurs in the United States, if the accusations

made in certain outraged posts can be believed. On controversial issues, such as Obamacare, the charge has been made that persons who are liberal write critically of the conservative position but as if they are a conservative person and vice-versa.) Morozov believes that both the soft authoritarianism of *Brave New World* and the harsh authoritarianism of *1984*, facilitated by online technology, are practiced by dictatorships and even democratic governments. "China is becoming more like [the West] in very visible ways (Starbucks, Hooters, cellphones that are cooler than ours), and [the West is] becoming more like China in less visible ones (torture, warrantless wiretapping, indefinite detention, though not nearly on the Chinese scale)" (p. 79).

Evgeny Morozov provides a stimulating analysis of online communication and the misapprehensions of what such technology can provide as well as has provided. He also points out important warnings, such as that western misunderstandings of Internet usage in other countries, like Iran in 2009, can and have led to the arrest of persons by authoritarian governments. His content is substantive and presented provocatively so that the reader can readily take note of his claims. These claims are generally supported by bibliographic listings for each chapter that total sixty-nine pages for the entire book. Unfortunately, the author does not provide specific support for the development of his conduct. Despite the fact that Morozov often quotes sources verbatim, he does not provide a single citation in the book. The lack of citations does diminish the academic value of his work. While the stimulating prose will appeal to many readers, the book should have citations for quoted as well as paraphrased content in order to

address the scholarly interests of the academician. Even though undocumented, the book does provide many interesting insights into the use, the limitations, and the misunderstandings of modern online technology.