Cybertopia, Dystopia Or More Of The Same—Recent Writings On The Unknowable Future Of The Internet.

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One suspects that the title *From Gutenberg to Zuckerberg* was the choice of its publisher rather than of its author, John Naughton, because the sense it gives of having arrived at a destination is precisely the opposite of the book's message. As he describes it, the Internet is very much a work in the early days of its progress and in the history of media technology there have been many more beginnings than endings. So Mark Zuckerberg is not the culminating point of the last 450 years of cultural change, rather a name that makes for a clever bit of wordplay in the title.

On the other hand Johannes Gutenberg has never had it so good. Ever since Marshall McLuhan plucked him from obscurity in the 1960s, he has been the brand name for the last major media revolution in the western world, the fifteenth century invention of movable type. Over time this deceptively simple innovation led to the mass availability of affordable books, the rapid spread of literacy, the widespread use of languages other than Latin in written texts and the loosening of church and state controls over individual minds and lives; this in turn brought about the reformation in religion, the rapid development of science and industry, the development of new literary forms like the novel, the growth of participatory government and a culture of enquiry and debate, in short most of those things that make the modern world different from the fifteenth century.

If the fifty years before the publication of *The Gutenberg Galaxy* in 1962 had seen the spread of other mass media such as recorded music, cinema, radio and television, these had still not brought about a comparable degree of fundamental change—it has only been the rise of the Internet that has raised the possibility that we are experiencing another media-led cultural revolution of Gutenberg proportions. If we take the impact of culture on human life seriously, and if we understand the impact of technology on culture, then this makes it a matter of the first importance. Naughton makes the point that those involved in and affected by historical revolutions generally have only a hazy perception of events as they unfold, and even less of a grasp on their long-term

implications. Although we now have a much greater awareness of the processes and possibilities of technologically-driven change than was possible in the fifteenth century, we have not, either collectively or individually, had much success at predicting the developments that have unfolded over the past twenty years; most attempts to do so have generally been based on extrapolating the most recent set of changes out into the indefinite future. By 1473, Naughton points out, eighteen years into the Gutenberg era, no one would have suspected that historians of the future would come to credit his invention with the Reformation and the rise of science, and we can expect similarly unpredictable and substantial change and disruption this time around. This might seem like an obvious point—and rather a disappointing one for those wanting a crystal ball approach—but, prior to the introduction of the Web in the early 1990s, mass participation in the Internet had not been widely foreseen and the dotcom crash of the late 1990s was widely perceived as the passing of a geeky fad, compared by some to CB radio. At that time Amazon was operating at a loss and social networking was something that happened at conferences and other face-to-face occasions.

Naughton takes Gutenberg seriously. It is easy to look back at the past and assume that what happened could not have happened otherwise, or that it resulted from the operation of abstract forces of "progress," in which contingency, luck, coincidence and individual lives played no part, but the unique skills that Gutenberg brought to his enterprise—metallurgy, metal casting, ink making and press construction (derived from winemaking), not to mention the raising of finance—suggest that the development of modern printing in Europe was not an inevitability, at least not at that time and in that manner. This is important for our understanding of the development of the Internet.

The social and political consequences of the print revolution may have taken centuries to emerge, but that they did so at all was due to changes brought about in human cognition and the way in which people interacted with one another and the world. Where reading had been the preserve of the very few, and confined almost entirely to the religious domain and to a very limited number of texts, the cheap replication of large numbers of texts created two new entities, the writer and the reader. Reading was essentially a private activity, but it transcended space and time and put the individual in touch with other minds and thinking. Over time, reading made possible the extended development and refinement of ideas, and made a space for a richer and more concentrated thought life than was available in an oral society. For the writer it became possible to reach and shape an audience, to make contact with those unknown individuals who might be prepared to listen, understand and act on their words. (Naughton also credits printing with the rise of "individualism," but this is a debatable point. Arguments that people in the past, and those living in oral cultures, were and are less fully formed than those living in literate and print-based cultures ignore the fact that the evidence is necessarily skewed in favour of those who are able to leave a written record. It could even be argued that people in oral societies, with more highly developed memories, more extensive networks of relations and connections and a shared store of anecdote, legend and history lead richer interpersonal and "internal" lives than most citizens of modern mass societies.)

Turning to the Internet, Naughton adopts an ecological metaphor to describe the interaction between media and human society: "Any change in the environment – in the media which support social and cultural life – will have corresponding effects on the organism." Identifying cyberspace as "a place all on its own" he recounts its utopian beginnings as a "a space in which corporations and

commercial interests were largely absent." In 1996, John Perry Barlow's Declaration of the Independence of Cyberspace ringingly declared it to be "an act of nature [that] grows itself through our collective actions" quite separate from that other space in which governments and businesses operate. " Where there are problems," Barlow declared, "we will ... address them by our means." Quite who "we" were was less clear but it probably didn't include the massive commercial interests like Amazon or Google who were already joining the early adopters. However, the idealistic and anarchic strain of the early Internet is not to be lightly dismissed, and Naughton points to its ongoing influence in such areas as wikileaks and the open software movement.

Alongside this utopianism there has been a equally strong dystopian counterpoint—the sudden mass availability of unfiltered information included, as newspapers obsessively pointed out, bomb-making recipes, pornography and, as blogging and other self-publishing channels became available, a cacophony of opinion, misinformation, disinformation and mindless trivia. What was worse the Internet was seen to be interfering with the very way in which our minds work, psychically rewiring us into shallow easily-distracted multitaskers and undoing much of Gutenberg's good work.

Naughton's third chapter, *For the Net, Disruption is a Feature Not a Bug*, is a brief history of the Internet, looking at those events that could have happened otherwise and arguing that continuing change is built into the very fabric of the network. The TCP/IP protocol grew out of the US Defense Department's ARPAnet project in the 1970s, and was deliberately designed to be both robust and flexible by having no centralised control and by not being optimised for any specific application. It was simply a system for sending ones and zeroes between points on the network and the system itself was agnostic as to what they were, forming the basis of our so-called Net neutrality. It was the openness of this architecture that made possible a number of what Naughton calls first and second order surprises, things that were possible because, fundamentally, nothing that was possible was disallowed.

The first of the first-order surprises was the World Wide Web, developed by Tim Berners-Lee at the CERN laboratory in Geneva in the early 1990s. Naughton gives us a nice account of how a relatively simple set of protocols (HTML), designed to allow scientists in different parts of the world to share documents, was both powerful and "open" enough to become the main road on the "information superhighway." (Naughton largely ignores the pre-Web Internet culture of the 1980s based around online bulletin boards, Usenet groups and FTP, and takes no account of the possibility that another protocol such as Gopher, also under development in the early 1990s and with a less permissive structure than HTML, could have achieved the critical number of users, the so-called "network effect," that would have made it the main road instead.) Although the work on HTML was carried out relatively quickly once the resources were in place, Berners-Lee had been thinking about his document-sharing system since the mid 1980s and his various proposals had been greeted with only lukewarm enthusiasm by his superiors. In the end it was only the relatively open culture of the non-profit-driven research lab environment that allowed the project to proceed, and we possibly owe the openness of the Web (the "end-to-end principle") to the leanness of this environment. The really important point, however, looking back at the history of HTML, is that it might just as easily not have happened, or that we might have been left with a number of competing protocols and no superhighway at all. Alternatively, had the Web come out of a commercial environment things could have been very different—Microsoft Web or iWeb! None of us has ever directly paid for a Web

browser, for example, but it would be highly unusual for a knowledge worker in the modern world not to have made use of paid-for word processing at some stage—most of us do so on a daily basis. iWeb in particular presents an intriguing prospect—an enticing but expensive multimedia digital paradise running on any Apple device and open to any developer to create content of which Apple Inc approved and from which they took their cut.

Things that work reasonably well, as the Web does, tend to be taken for granted as part of the natural tendency of the world to progress, but in 1999 the second of Naughton's first-order surprises was indeed a great deal more surprising: Napster, the peer-to-peer (i.e. computer-to-computer) system created by a nineteen-year-old, that allowed digital music files to be shared between any two Internet users. At this point the true meaning of Web openness became dramatically apparent; Shawn Fanning's system involved a massive breach of copyright, and was shut down within a couple of years, but there had been absolutely no technical barrier to its creation and dissemination. What was worse for the stunned and disrupted recording industry, by the time Napster disappeared the mp3 cat was well and truly out of the bag and peer-to-peer filesharing had become normalised and ineradicable.

The third first-order surprise was even more alarming and sinister in a way that Napster, which can be seen as an act of genuine, albeit illegal, generosity, was not. From the mid-1990s on, the sudden upsurge of connection to the Internet of millions of PCs, many operated by naïve users, created an ideal environment for the growth and spread of the malware, spyware, bots, botnets and spam that we still endure on an everyday basis. This is the downside of Internet openness; for example, the protocol under which email operates (SMTP) does not have a provision forcing senders to authenticate themselves, and therefore enables the low-risk and low-cost sending of massive amounts of spam that has in turn significantly compromised the effectiveness of email (the first Internet application many of us used) as an everyday tool. Contrary to Barlow's declaration of independence, the "we" of cyberspace was really just the same old "us"—criminals, vandals, advertisers and just plain nuisances included—that we had been all along.

Naughton's second-order surprises, "innovations that built on the openness of the first-order surprises," are Wikipedia and Facebook, both examples of Web 2.0 or the participative Internet. As originally conceived of by Berners-Lee, the Web was essentially a read-only environment, a means of creating access to finished documents and other digital objects, but the needs of ecommerce had led to mechanisms through which users could interact with websites. By allowing users to talk back to it, the Web had gone from being a broadcast medium to a social one, and Web users now had the ability to become participants without going to the trouble of creating a website. There is not space here to discuss the pros and cons of Wikipedia as an academic information source, but its continued existence and the fact that it has become indispensable to many or most of us as an everyday fact-checker probably speaks for itself. Naughton quotes James Boyle on the subject of "cultural agoraphobia," that "we are very good at seeing the downsides and the dangers of open systems" [i.e. Wikipedia] but that "it's easier for us to understand the benefits of closed systems [i.e. Encyclopedia Britannica] and harder for us to see the downsides." Similarly with Facebook, the power of the Network Effect has made it, at least by my observation, the preferred social space for a generation of students, often displacing the formal (closed system) shared spaces provided by their own institutions as they create their own course-based (open system) Facebook groups away from

the prying eyes of lecturers. It could be argued that blogging and Twitter are better examples of truly participative Web 2.0 applications, but Facebook probably earns its place purely in terms of penetration. There may be millions of blogs and bloggers, for example, but most people don't blog, whereas "everybody" (at least among active Web users) either "does" Facebook or has made a conscious decision not to. Wikipedia is similarly ubiquitous, appearing high in the lists of Google results and requiring a deliberate avoidance by those who choose not to use it. The network effect is a powerful force.

A persistent concern about the Web 2.0 is that it is "killing off" established media and professions, such as newspapers and journalism, and replacing them with the well-meaning, but lower value, work of amateurs in the form of bloggers. (Dan Rather called them "guys in pyjamas".) Naughton adopts an ecological approach, likening the newcomers to introduced species that inevitably change the environment they enter, but that eventually find their niche without necessarily displacing the previous inhabitants. Printing had already done this, lessening but not destroying the influence of the individual preacher in religion by making a variety of sermons available to believers, and in more recent times television had modified, but not displaced, newspapers, radios and cinema. Bloggers, he argues, have entered into a symbiotic relationship with journalists, able to keep stories going long after they would have disappeared from front pages or news bulletins, while the professional media provide wider exposure, larger financial resources and more solid credentials. The relationship between the Guardian newspaper and Wikileaks is an example of this; although it eventually dissolved into distrust on both sides (in itself a telling point and one that does not necessarily contradict Naughton's ecological thesis), this was only after the Guardian had allowed Julian Assange a greater visibility, credibility and freedom from interference ("freedom of the press" is still more secure for established media), while the Guardian in turn gained exclusive access to a mass of material from which high profile stories could be mined. The relationship between established media and bloggers is never an easy one, but this can work in our favour as consumers—obvious media mistakes are seized upon with glee by the blogosphere while professional journalism, or at least those sections of it that take professionalism seriously, continues for the time being as a reservoir of journalistic traditions, training and standards.

In the 1960s investigative journalism was a successful response to the threat posed by television news, but the Internet represents a more direct threat to the news media through its direct siphoning off of advertising revenues and there is as yet no obvious answer to this concern. In the final analysis, Naughton sees the traditional media as following a "lean-back" one-to-many broadcast model, while the way of the future is the "lean-forward" participative model. He is excited by the possibilities of what he terms Creativity 2.0 and Productivity 2.0, in particular the mass of do-it-yourself content that has flooded onto YouTube, such as the parodies of the Hitler movie Downfall that have the Führer complaining about, for example, Xbox 2 or the Wellywood sign. This is all very well, but somehow Naughton seems to be straining to find a killer example of user-generated creativity here. Some of the Downfall clips are indeed very funny but they depend for their effect on the original film, not only on its production values but on the fact that it is a serious and well-known mainstream work. His other example is Charlie Bit My Finger, truly a YouTube highlight but really a lucky accident and less than a minute in length. He is on firmer ground talking about the importance of remix culture, the disaggregation and recombination of both blogs and newspapers through rss feeds and, increasingly, through Twitter and Facebook. The future, he argues, will favour smaller

units, songs rather than albums, headlines and paragraphs rather than newspapers, extracts rather than books—an increasing granularisation and personalisation of the content we chose to consume. There are precedents for this of course in the "commonplace books" of early modern Europe (the original personal mashups) but sampling and remixing are now happening on an unprecedented scale. Writing of "the lumbering dinosaurs that dominated the old media ecosystem," he observes that "small wonder that they feel depressed."

If part of our reaction to all of this is simply to long for past simplicities, then there is no good news. Complexity is an inbuilt feature of our new reality and is not going to go away. In an interconnected world, the individual person or enterprise has less ability to foresee events and make plans, and a great deal of activity takes place outside of formally organised structures such as marketplaces or educational institutions. Where new structures, such as TradeMe or eBay, have come into being they have created their own sets of rules along with new sets or possibilities and risks. This breaking of barriers has extended even to the computer itself, with desktop and laptop computers no longer operating as standalone digital domains but giving way instead to the new realities of cloud and mobile computing. The Internet itself, Naughton points out, has become our computer, and with this there is a necessary trade-off in terms of both privacy and autonomy. Meanwhile the Web continues to evolve in terms of both functionality and complexity, with rss feeds allowing us to personalise our web interactions and APIs (Application Programming Interfaces) giving web designers the tools to create mashups from disparate pieces of web content, such as the use of Google maps on local body or commercial websites. According to Tim Berners-Lee the next step is the Semantic Web, where artificial intelligence will allow search engines to interpret the meanings of words on web pages rather than simply carrying out crude (but effective) character-matching operations as they do at present.

Space does not permit a detailed examination of the arguments around copyright here, but they are obviously fundamental to many of the issues around the Internet as a channel for the trade and exchange of cultural objects in digital formats. Naughton makes the point that when the various copying technologies, firstly analogue systems (which created imperfect copies and carried no inbuilt transmission mechanisms) and then digital ones (which created perfect copies with no technical barriers to transmission thanks to the open architecture of the Internet) came into use in the second half of the twentieth century, they did so in a period when popular culture was heavily professionalised, in fact industrialised, and the resulting clash of interests has been particularly strong. Copyright is broken, open to profit-gouging (academic publishing) or heavy-handed legal abuse (see the case Kookaburra Sits in the Old Gum Tree v Men at Work) on the one hand while being largely ignored on the other, with the result that the law is held in contempt. Digital rights management has been the industry's response and, in my view, has some chance of success if a light and customer-friendly regime is put in place. The recently introduced Spotify could be part of the answer – it is based on a low-cost pay-for-service model with content "borrowed" from the Cloud rather than owned and locally-stored. Not all content owners are happy with this model however and it is likely that copyright will be the site of ongoing culture wars as a read-only industry strives to survive in a read-write environment.

The book concludes with an extended examination of two dystopian novels. George Orwell's 1984 offers a scary vision of a future in which life and thought are under tight control by central

government and in some respects foreshadows the surveillance society we are beginning to take for granted (and which the Internet hugely facilitates) while Aldous Huxley's *Brave New World* represents instead a society in which the individual is trivialised and controlled by pleasure and entertainment. Naughton posits that we may have already progressed beyond the original open digital citizenship of the early Internet into a space largely controlled by the new corporate giants of the Internet industry, such as Google and Facebook, who both spy on us (with our "consent" usually conferred by mindlessly clicking on the I Agree button without reading what we've just signed up for) and delight us, while all the while selling information about us to their advertisers. In the short term this may not seem to matter very much—I never really notice ads for example—but what it means for the Internet is that it is being shaped with the interests of those companies and their clients in mind, rather than those of the digital citizenry at large. Naughton quotes Tim Wu, whose book *The Master Switch* has described a cycle of innovation and openness in communications technologies followed by a narrowing of control and eventual monopoly. There is an upside to this of course, as anyone who has used iTunes with iPod and/or iPad will tell you, but it brings us into a quite different sort of utopia than that envisaged by John Perry Barlow.

If *From Gutenberg to Zuckerberg* reached a somewhat depressing conclusion, Nicholas Carr's *The Shallows: How the Internet is Changing the Way We Think, Read and Remember* could be enough to put you off going online entirely. I must admit coming to it with a degree of scepticism —alarmist titles and subtitles beginning with "How The ..." are not particularly to my taste—but found myself frequently nodding at what I was reading with a degree of rueful recognition. The book is a fully-developed treatment of the argument he made in his 2008 essay in Atlantic Magazine "*Is Google Making Us Stupid?*" which was that extended use of the Internet had changed the way in which we read and in which our minds deal with text. In comparison with the deep and extended reading of books, when we read on the Internet "our ability to interpret text, to make the rich mental connections that form when we read deeply and without distraction, remains largely disengaged."

Drawing on the research of development psychologist Maryanne Wolf, he argues that the debate about content on the Internet (dumbing down or digital nirvana) overshadowed the more fundamental question of its effects on the way in which we engage with, understand, store and recall information. Once again, the key figure had been Marshall McLuhan who had recognised, in his memorable phrase, that "the medium is the message," that our brains are shaped by the tools they make use of and that someone living in a largely sound-based information environment thinks in a different way from those who primarily absorb information through print. In a print-based world, for example, we make less use of memory for things that we are able to write down, but have a highly-developed word recognition facility, a larger vocabulary (being sourced more widely than simply from people with whom we directly interact) and the ability to follow, and to create, lines of thought connecting widely separated ideas, observations or domains. It is this last facility, concentrated deep reading and extended thinking, that resulted from a "virtuous cycle," whereby growing literacy had created a demand for more writing which eventually led to the sorts of lives that were situated largely within the print domain. Carr quotes the words of Wallace Stevens to describe this synergy—"The reader became the book."

It's a pretty fair point that the hyperlinked Web document and the modern multi-windowed computer are designed to distract us away from this sort of single-object deep concentration. As we

read and write, if we do so in a digital environment, we also check email, follow links from the text to the dictionary or Wikipedia which may lead us to other links, receive interruptions from Facebook friends commenting on our latest status, and, if we are not careful, end up watching the proverbial snake swallowing an egg on YouTube.

To me Carr is at his best describing his own personal experience, and although the scientific evidence he uses to back up his claims is impressive I'm not sure that we needed quite so much of it in order to get the point. That the Web and our other electronic media are distracting is pretty well-understood and the need to carry out extended mental work often requires us to retreat into a quiet zone. Whether we are undergoing a fundamental psychological change is less clear, and it could be argued that despite all the distraction and noise the Internet has still tended to reinforce the importance of text among our media resources. Carr also tends to paint all change as bad, which in the end has the effect of diminishing his argument. While it is true that reading a book on an e-reader is different from reading it in print, it is not so markedly different as to obviate any advantages we might find in the digital format. (Shakespeare did not write in order to be read, for example, but his work has survived the format-shifting remarkably well and we can be grateful for being able to look his words up in a book whenever we wish to.) Rather more interesting is his attack on artificial intelligence and by implication, although he does not name it, the semantic web. One of the more inflated claims made by Google has been that eventually their search engine wouldn't just find information for us, but would be, in Larry Page's words, "as smart as people—or smarter." In fact, Carr argues, AI research has come to something of a dead-end, unable to reduce the workings of our minds to a set of algorithms that would be able to interpret the difference between "time flies like an arrow" and "fruit flies like a banana."

Both Naughton and Carr look back approvingly to the scholar and critic Neil Postman, whom Naughton in fact describes as "the most compelling media commentator of my lifetime." Postman's *Amusing Ourselves to Death: Public Discourse in the Age of Show Business* is a sustained and sobering attack on television and its role in dumbing us down and reducing the level of public debate to set positions and soundbites. As with Carr, there is much to recognise and approve of here, but by the end of the book the overall impression is that Postman hasn't liked any new media since Gutenberg and that, in his view, the world has been going to the dogs for the past two hundred years. In fact he explicitly argues that "in the eighteenth and nineteenth centuries, American public discourse, being rooted in the bias of the printed word, was serious, inclined toward rational argument, and, therefore, made up of meaningful content."

So when, we might ask, did things start going wrong, when did we begin to turn from serious to show biz? Postman can put a date on this; it was the invention of the telegraph in 1837 that "destroyed the prevailing definition of information and ... gave a new meaning to public discourse." By breaking the bounds of local community, where all news was immediately relevant and useful, the telegraph, and later the telephone, cinema, radio and television, had made available a diet of sensation and trivia to displace the serious and rational discourse of his beloved eighteenth century. In support of this argument he quotes Henry David Thoreau, complaining of the prospect of a trans-Atlantic telegraph that "perchance the first news that will leak through into the broad flapping American ear will be that Princess Adelaide [daughter of Queen Victoria] has the whooping cough." I have a problem with this oft-repeated quote, which is that it *precedes* the American experience of

the telegraph, and predicts rather than describes its effect—in other words, it is proof that the tendency towards triviality was well and truly present before the era of electronic communications. More generally, Postman's veneration of the "rational" eighteenth century makes him guilty of the golden age fallacy, a variation of the progressive fallacy which places the ideal human society not in the future but in the recent past.

By way of contrast, Clay Shirky takes a thoroughly optimistic view of the networked era while being crisply dismissive of the claims of deep extended reading; he has said of *War and Peace* that "it's too long, and not so interesting." This may sound somewhat glib, but his book *Cognitive Surplus: Creativity and Generosity in a Connected Age* displays a good deal of sense, learning and extended thought alongside its sometimes breathless positivity. In particular Shirky does something that the three other authors under consideration do not; where they see society very much as being shaped and determined by its media choices, he asks a more basic question, which is about the factors that determine the media choices we individually and collectively make. Like Postman, he identifies television as the dominant medium of the late twentieth century, but rather than placing the blame for its shallowness entirely on the medium he looks instead at its social meaning, likening it to the epidemic of gin drinking in eighteenth century London, which led at the time to a similar degree of moral panic ("mother's ruin") and calls for regulation. The root cause of the gin problem was not gin itself, which had been around for some time, but the social disruption caused by industrialisation and urbanisation. He does not deny that excessive gin consumption had serious consequences in itself, and that it needed to be controlled, but suggests that the gin culture was a necessary stage of adjustment to a new social reality, and that it declined once sufficient social supports were in place for the urban population to exist more comfortably.

According to Shirky the social change underlying the television (and, by extension, the Internet) epidemic was the sudden availability of unstructured free time in people's lives from the 1940s on. Where work, both outside the home and domestic, and child rearing, had taken most of people's time, there was now a surplus of available hours in the day. Smaller families and geographic separation from extended family and friends compounded this unlikely "problem" and the result was an epidemic of television watching which was, like gin, cheap, highly available and pleasantly anaesthetising, even if it did not, in the long run, lead to greater individual happiness. As an antidote to loneliness the box provided not only a family activity (reading tends to be a solitary pleasure) but also an endless supply of ready-made but fictional friends and companions.

Shirky is, then, no fan of television but he does, I think, correctly identify time availability, loneliness and social disconnection (despite "busy" modern lives we watch on average twenty hours of television a week) as the major factors underlying the heavy use and misuse of modern media. Turning to the Internet, he finds rich support for his argument in the rapid growth of Web 2.0, and this is where the "cognitive surplus" comes into play. In the professional realm, the development of open source software like the Apache webserver has been a notable cooperative achievement, but Shirky's true interest lies with the cooperative power of ordinary people. Taking issue with nay-sayers like Andrew Keen (who in *The Cult of the Amateur* likened bloggers to monkeys) Shirky points to Wikipedia as one example among many of the power of the Internet to harness and organise disparate and geographically separated groups into powerfully functional units, comparing this effect to the "invisible college" of scientifically-minded individuals who came together around the

chemist Robert Boyle in the mid-seventeenth century and went on to form the Royal Society. Social networking has made it easy to coordinate otherwise isolated individuals into ad hoc teams for highly specific purposes, with a speed and efficiency that could hardly have been imagined even ten years ago—the Student Volunteer Army that came together after the first Canterbury earthquake of 2010 and then used Facebook for a second and much more dramatic deployment in February 2011 is a striking local example.

For Shirky any positive engagement with social media is preferable to the passivity of being a mere consumer, and every posting of a lolcat to ICanHasCheezburgers is a piece of cultural production. Naturally this brings to light a great deal that is banal, repetitive, trivial or nasty (check out the comments made about operatic sopranos on YouTube) but this is only to be expected from mass participation and may be simply a stage we have to go through on the way to achieving greater collective maturity. As he points out, mass participation in any endeavour will bring down the average performance but will not affect the top end, so we still have plenty of items of high cultural value. At its best mass participative behaviour can lead to powerful social action. Shirky gives the example of the Association of Pub-going, Loose and Forward Women in the Indian city of Mangalore, formed to combat controls on women's social freedoms, but sometimes this type of activity can begin spontaneously within groups formed for different purposes. In the United Kingdom Mumsnet was originally founded as a source of advice on parenting issues but has broadened out to become a powerful and influential forum on domestic violence and rape, to the point that these are now characterised as "mumsnet issues."

It would, I think, be wrong to characterise Shirkey as a wholly uncritical cheerleader for the Internet as a social and political force for good, but he does position himself very much at that end of the spectrum. A useful counterpoint to Cognitive Surplus is Evgeny Morozov's *The Net Delusion: The Dark Side of Internet Freedom*. Morozov is a startlingly young Belarussian with an exceptionally mature grasp on the geopolitical and social realities of life in authoritarian countries, and he takes particular issue with the notion that it was the battle of ideas and the influence of western media that brought an end to communism in eastern Europe and its replacement with democracy, and with its neoconservative corollary that the same thing is about to happen with the Internet. Far from being bumbling print-age technophobes, modern authoritarians are technically savvy, whether it comes to flooding the Web with cheap and diverting entertainments, using lists of Facebook friends to compile an inventory of political suspects, or corralling the efforts of nationalist bloggers and commenters in support of their own political agendas. Using examples from a variety of contexts, Morozov skewers the widely held belief that the Internet has inherent qualities that favour the western democratic consensus, and points out that the repetition of this position by American government officials makes it easy for the Chinese government to paint demands for Internet freedom as simply another form of political interference. All governments face demands to curb absolute Internet freedom, and one doesn't have to give in entirely to moral and political relativism to recognise that one country's freedom fighter is another's terrorist. On top of this, the same tools that can coordinate political demonstrations can also be used to facilitate widespread harassment of minorities and even genocide. We are already a long way from saving the world one Facebook petition at a time.

As a profession, librarians have engaged with the Internet longer, more intensively and perhaps more creatively than most and this may create an illusion that we are successfully riding the tiger. The idea of change itself has perhaps become such a cliche that we no longer take it seriously, but this would also be a mistake. Looking at these five books I can recognise within myself and my colleagues important elements from each of these authors. Neil Postman's passionate commitment to enlightenment values and the primacy of the book still underlies much of what we feel, even as we recognise that the world moves forward and that we need to curb our nostalgic anger. Nicholas Carr provides a powerful reminder that the voices of distraction need to be resisted and that, in the end, computers and networks are machines and tools and we are people and we do well to keep the two categories at arm's length. Clay Shirky on the other hand knows that the world is always, and never, going to hell in a handbasket and that we need to look for the positive human values in even those things that we are most tempted to deplore and to always seek to explain as well as to condemn. Evgeny Morozov, however, is a timely minder that Net neutrality includes political and moral neutrality and that powerful tools lose none of their power in the wrong hands. If you have time to read only one book, though, it should probably be John Naughton's comprehensive account of where we are, how we got here and why we don't really have a clue where we are going.