

HULA HOOP OR CONTRACEPTIVE PILL?

Misunderstanding the Nature of the Social Impact of Technology

BY BRIAN WINSTON

Obviously, the contrast between Hula hoops and contraceptive pills is an absurd one since the one, Hula hoops, was for its sudden vogue merely a leisure fad – a brief summer shower over the terrain of Western culture – whereas the contraceptive pill, speaking as it does to a most basic human function, has had, arguably, a most profound effect on our society. Nevertheless, the Hula fad half a century ago is resonant with current rhetorics surrounding new media. Introduced in 1957, 25 million hoops flew off the shelves in a mere 4 months and by the time the fad had passed two years later well over 100 million, more than one for every American, were sold. The young entrepreneurs, Richard Kerr and Arthur ‘Spud’ Merlin, owners of the Wham-O manufacturing company of California, made \$45 million. In 1959, they came up with the Frisbee. In 2006 Wham-O was sold for \$80m – to the Chinese – and one can still buy Hula hoops should one be so inclined.

Leaving aside entertaining parallels with contemporary booms and busts, I want to use this example to draw attention to the difficulty of evaluating the transformative effects of social phenomena, including the impact of technology. What I would like to suggest is that the distinction between Hula hoop fads and real societal change is not always so easily drawn as it might seem, especially where the technologies of communication are concerned. Assessing technological impacts and potentials is difficult, and no field reveals this more clearly than does the media. And there is a pronounced tendency, in the academy, industry and the market place, simply to assume that because a technology can provide something, it inevitably will be called upon to do so. The hyperbole that results from this is then, more often than not, grossly amplified by the media with the result, widely perceived and received, that we are in the midst of some species of technologically driven communication ‘revolution’ – at the level, in terms of its social impact, far closer to that of the contraceptive pill than that of the Hula hoop.

A good example is the the current hyperbole surrounding social networking sites on the internet like *MySpace*. This ‘next generation portal’ (as its founder Chris DeWolfe called it) attracted, in the US in its first three years, 54 million unique visitors, as teenagers used the site to organise their social lives.¹ In a manner reminiscent of the dot.com boom of the late 1990s, DeWolfe sold the business to Rupert Murdoch for close to half a billion Euros and the site has spawned a number of copies – *Facebook*, initially popular with British students, or *Bebo*, popular

1 Gibson: “The Man Who Put Teenagers’ Lives Online”, p. 5.

with schoolchildren, or this year's Marianne of the digital revolution, *YouTube*. The rock band *Arctic Monkeys* became stars as a result of word-of-mouth spread by their local fans on *MySpace* which by 2006 had some 2 million bands on the site. This, which DeWolfe calls a 'democratising effect', was being replicated with videos. Some 50,000 to 60,000 new videos per day were appearing on the site.

Clearly this sort of social networking site is a very significant development – or is it? Are *MySpace* and its successors and competitors really a transformative technology changing the social lives of us and our children in fundamental ways – or is it a passing fad with an impact easily contained within the established norms of our social sphere? Despite received opinion and the usual technicist litany, there is reason to consider it might be closer to the latter. Previous 'hot' social networking sites like *Friendster*, *Geocities*, or *Tripod* have rapidly gone the way of all flesh. Immediately after the sale to Rupert Murdoch, Billy Bragg, the radical British musician, pulled his material from the site because of *News International's* terms of trade. Suddenly *MySpace* had raised fees; and maybe 2 million bands are, at present, happy with the exposure, but will they remain so once people really start listening to them and Murdoch and *MySpace's* owners claim their shares – not unlike that taken by the despised record companies? Bragg suggests not.

Pace down-loading and file sharing, the emerging situation is unsurprisingly (except to technicist hyperbolists) a long way from *Napster* and the dream of 'free' music – a utopianist vision which never made clear how the artists creating this common good were ever going to make a living. The suppression of *Napster's* radical potential continues, piece-by-piece. Last year, an agreement was reached by which copyrighted music used by amateur content providers and others on *YouTube* will be recompensed by *Google*, *YouTube's* owners.²

The price of CDs, faced with this digital competition, has fallen – but there would have been many other ways of forcing the exploitative behaviour of the record companies into line without technology. Record companies were arguably operating a world-wide, and illegal, cartel and had been doing so from the time of the introduction of a mass market for recorded music before the First World War. The record majors are indeed in real trouble but 'file-sharing' is not a new threat. The very move to bring CDs to market in the early 1980s – putting together digital audio recording (which had been deployed for at least a decade in professional studios) and video laser disks (which had failed to replace video-cassettes) – had as its supervening social necessity exactly that people were copying LPs onto audio cassettes. In the US, it was estimated that five copies were made of every LP sold.

Technology alone, it can be claimed, will not explain why the record companies survived at that time but are so fragile now. An answer lies in what can be described as the suppressed in this discourse – that is: the state of the product, the music. Popular music simply has not changed that much, *pace* hip-hop etc.,

2 Wray/Clark: "Music Stars Set to Reap YouTube Windfall", p. 7.

since *Bill Haley and the Comets* began plucking guitars; and that, like the Hula Hoop, was half a century ago.³ It seems clear to me that, whatever the impact of current music distribution systems on the business – and it is clearly profound –, this impact alone is not the reason for the industry's malaise. After all, it is still making money and looking for ways of making more. Apple's *i-pod* may take a smaller share than the music industry traditionally did – but the music must still be bought. Whole digital downloaded disks, at least in the UK, cost around the same as CDs.⁴

"Oh you weary giants of flesh and steel" proclaimed *Grateful Dead* lyricist John Perry Barlow more than a decade ago, "I come from Cyberspace, the new home of the mind... I declare the global space we are building to be naturally independent of the tyrannies you seek to impose us."⁵ But it seems that the giants are still very much around and this was (and is) so much twaddle – even before the cynics amongst us begin to question the numbers that trip so lightly from the technician tongues of cyberspace.

The internet is after all a world almost entirely without true independent audit – a striking example is internet advertising. When it comes to hard money (say, Murdoch's billions) and to usage – access or advertising fees –, there is talk about a medium of unimaginable power and influence. The dominant business model is search engine advertising which accounts for nearly 60% of UK web ad expenditure. This is followed, at just over 20%, by video and in-game advertising powered by the current popularity of *YouTube*. Ad revenues grew by 40% to some €2.6 billion in the UK in 2006. It was €3.5 billion last year, and further 35% growth – and this in a flat, indeed, falling advertising market.⁶ The money is certainly changing hands but – is the internet really a medium of unimaginable power and influence?

The hype suggests cyberspace has already penetrated the world at such a level that vast expenditures of funds to buy and sell sites is justified according to established business models but as Andrew Odlyzko, head of digital technology centre at the University of Minnesota, points out, this world is a curious smoke and mirrors one.⁷ A basic statistic informs us that in 2001 internet use was increasing at a four fold rate and would continue to do so through this decade. This figure was determined by a researcher, Dr. Larry Roberts, contacting 19 carriers and counting not actual usage but the nodes and the revenues these companies reported to him. These figures are self-reported and not externally audited. Moreover, the companies bound Dr. Roberts to non-disclosure agreements. Another

3 Allen: "Still waiting", p. 27.

4 Handysides: "CD or Download", p. 31.

5 Barlow: "A Declaration of the Independence of Cyberspace", <http://homes.eff.org/~barlow/Declaration-Final.html>.

6 Bulkley: "The Digital Persuaders", p. 1.

7 Lillington: "A Ninety Billion Dollar Mistake", p. 3.

graphic illustration of the dangers inherent in accepting untriangulated, unaudited usage figures is the fact that the figures of net advertising revenues just quoted come from a UK body called the *Internet Advertising Bureau*. Despite its name, the 'bureau' is it not an independent institution but an industry lobby group. I am not arguing that these or any other statistics relating to the net are mendacious. They are simply not externally verified.

The situation exactly reflects that of newspapers in the late 19th century when advertisers were asked to pay rates on the basis of circulation figures provided by the newspapers themselves. Eventually the advertisers revolted and demanded independent audits of circulation. The newspapers were forced into supplying circulation figures through independent 'bureaus' (which, it can be noted, they are nevertheless still capable of manipulating despite these watchdogs).⁸

The *Internet Advertising Bureau*, in any case, gives €2.6 billion as the 2006 UK internet advertising figure – some 11% of total advertising revenues, all media, up over 8 years from less than 1%. Conspicuously, even after this massive spurt more than 85% of British advertising is still *not* on the net, and under threat of depression money is getting tighter.⁹ It seems to me a fair assumption that real competition in advertising with the older media is going to demand real 'bureaus' ere long – and a serious account of exactly how much independently verified click-through traffic from the search sites actually occurs.

According to another statistic, over Christmas 2006, there was a 40% increase in UK sales on the net. But as the base level was only 4% of UK retail, this represented a 1% increase of market share. In a civilisation whose main contemporary architectural expression is the shopping mall this is scarcely surprising. 4% of retail is not, for example, comparable with the highest historic levels achieved by mail order since it was introduced as a marketing technique in 1872. There is still a long way to go before e-commerce catches up with Sears Roebuck in its heyday.

The hype defence, somewhat battered after the late 90s dot.com fiasco, is that the rules of cyberspace are not those that governed 'the giants of flesh and steel' – but they are. Kodak, for example, is shrinking as film disappears and its century and a quarter dominance of the imaging industry disappears.¹⁰ In 2004, it shed 15,000 jobs and 2000 more in 2006 – but, note that it took *Cisco* just 12 years for its business to shrink to the point where it let 8500 people go in 2002. *Nortel* posted the biggest loss to date in corporate history – \$19.4 billion – that same year. And last month, *Eidos*, owners of the amazingly popular *Lara Croft* franchise, announced a hundred million euro loss and fired a quarter of its workforce.¹¹ But despite shrinking fast and also loosing money *Kodak*, which will be

8 Winston: Messages, p. 387

9 Cf. <http://www.iabuk.net/en/1/searchresults.mxs?sp=2006+advertising>.

10 Teather: "Kodak Pulls Shutter Down on its Past", p. 23.

11 Wray: "Last Chance Saloon for Lara Croft Creators", p. 39.

125 years old in 2009, in fact still had revenues of \$1.5 billion from its traditional photographic business as well as nearly \$2 billion from its digital activities.¹² The point is that when these firms old, like *Kodak* or the ill-managed *Polaroid* Corporation, or new, like *Cisco*, *Nortel* or *Eidos*, find themselves in difficulties, there is evidence of continuity in the operation of the market place, not a totally new economy manifesting itself. The old rules allow even the sustainability of *Microsoft* to become a subject of concern in some quarters, since it is threatened now by the end perhaps of shrink-wrapped software which could become as outdated as *Kodak's* silver nitrate film.¹³ Despite the hype, talk of a new economy sounds very much like Jehovah's Witnesses proclaiming the imminent arrival of Armageddon: it has not happened but technicians never desist from proclaiming its coming.

This is no denial of actual change; on the contrary, it is a mark of our civilisation that change is ceaseless. What I am asking is whether the pace of change and the nature of change is truly transformative or rather faddish? *MySpace* is again a case in point. Chris DeWolfe was reported as saying "Rupert is a very smart guy. He reinvented the newspaper industry. They said a fourth TV network would never work and he did it. He's got a really good gut feeling when it comes to media"¹⁴. Being complementary to somebody who has presented you with a cheque for nearly half-a-billion euros is probably not surprising, but there is more to this statement. Murdoch did not 'reinvent the newspaper industry'. His much-vaunted destruction of the British print unions in the 1980s has not in any way halted the inexorable decline of UK newspaper readership – popular tabloid newspaper readership – at all. Total circulation of the British national dailies prior to Murdoch's attack had been shrinking – two million copies a day lost between 1950 and 1970. By 1975, just over 14 million copies were being sold. National 'Sundays' sales had shrunk by a third in the same period; local papers by a fifth. After his supposed 'reinvention', circulations were at best barely stabilised and British tabloid sales still declined by 8%. Overall the UK national daily figure is 20% down since 1990.¹⁵ Moreover, the fourth US TV network was never denied as a possibility but Dumont, which held this position, was deliberately killed in the post-World War II period by the Federal Communication Commission at the behest of the radio networks uncertain of their television future. Fox TV is in fact founded on the remains of the Mutual Network which was an alternative to Dumont. In other words, the fourth network has always been there, its growth stunted by external forces which were neutered for Fox.

Anyway, Murdoch came to this terrestrial solution after several heavy blunders in the field of new media. In the 1980s in the US he repeatedly announced and then delayed a satellite service and, lacking the support of a Mrs Thatcher ea-

12 Anon.: "Slumping Film Sales Leave Kodak Figures Deep in Red", p. 23.

13 Markoff: "A Mold at Microsoft Starts to Show Cracks", p. 13.

14 Gibson: "The Man Who Put Teenagers' Lives Online", p. 5.

15 Winston: Messages, p. 386.

ger to cut the BBC to size (the secret of his British satellite success), he gave up to create Fox, a traditional US terrestrial television network, instead. His other attempts to exploit new media have scarcely been more successful.¹⁶ What is really interesting about DeWolfe's view of Murdoch is that he heaps praise on the man as a visionary not because of Murdoch's exploitation of the new but because of his success with the old – which DeWolfe then misreads, not knowing much of the history of these media.

Indeed, not knowing history is critical to the technological determinist view of the world. This view, the dominant one and the source of all 'revolutionary' hyperbole is crucially based on a history written by an amnesiac. There are two basic views in play here – the dominant technicist one and another which privileges the social over the technological and can be called 'the social shaping of technology' (SST, for short), or 'the social construction of technology' view. Of technicism, Raymond Williams, the leading pioneering British anti-technicist, elegantly suggested that:

The basic assumption of technological determinism is that a new technology – a printing press or a communications satellite – 'emerges' from technical study and experiment. It then changes the society or the sector into which it has emerged. We adapt to it, because it is the new modern way.¹⁷

Therefore, technological determinism

is an immensely powerful and now largely orthodox view of the nature of social change. New technologies are discovered, by an essentially internal process of research and development, which then sets the conditions of social change and progress. Progress, in particular, is the history of these inventions, which 'created the modern world'. The effects of the technologies, whether direct or indirect, foreseen or unforeseen, are, as it were, the rest of history.¹⁸

It can be argued that technological determinism has achieved its hold over the Western mind exactly because it meshes fundamentally with the Western mind-set, notably the deep-seated concept of progress. The underlying driver is the concept of forward motion, seeking spiritual perfectionism, teleologically prefiguring the last days of the Rapture. It is but a short step hence, although one which was to take many centuries to emerge, for this to become individualised and then transformed into a demand for freedom of conscience in matters of Christian faith. This religious demand was comparatively swiftly echoed in a parallel de-

16 Winston: *Media Technology and Society*, p.302.

17 Williams: *The Politics of Modernism*, p.120.

18 Williams: *Television*, p. 13.

mand for secular individual autonomy and politicised as a social contract which conceived of society as individuals contracting with each other to create a social sphere in which to function. By the 18th century, Christianity's promise of human perfectibility had thus acquired a materialist cast. The Enlightenment view was that the human race, now "emancipated from its shackles released from the empire of fate" was "advancing with a firm and sure step along the path of truth, virtue and happiness"¹⁹, as Concordet put it.

Crucial here is the image of humanity's 'advance'. In the 19th century, technology became an autonomous fundamental driver within the social sphere and the bridge from Christian ideas to a technologised vision of progress was completed. The idea of progress exactly echoes Williams's characterisation of the technological determinist vision as an unstoppable flow of emerging technologies moulding the structures of society. This reflection is not, it must be noted, dependent on sharing Concordet's optimism about the end result of this advance; humanity could just as easily be rushing towards an abyss. New technology might be positioned as an engine facilitating 'truth, virtue and happiness'; or it could bring exactly the reverse results.

However, as I hope I have been indicating, a central difficulty with technicist accounts is that they do not entirely explain the phenomena with which they deal but instead indulge in sustained hyperbole. The tendency to ahistoricism is well illustrated by the current insistence on a 'digital revolution' in general. This technology is now, at a minimum, in its sixth decade of development, the first device to encode an electronic signal digitally having been built in 1938.²⁰ In turn, that device relied on mathematical calculations as to sampling rates that had been theoretically determined a decade earlier. The digital devices, including the computer, that were to suffuse the market in the last quarter of the 20th century, relied on solid state electronics which were not 'invented' (as is commonly believed) at the Bell Labs in 1948 but go back to experiments with semi-conductors in 1879. Cats' whiskers radios were the first solid-state technology to be widely diffused from the 1920s on.²¹ This is why technicist accounts, in so far as they are necessarily historical – else how can 'revolutionary' impact, for example, be established – tend all too often to be histories written by amnesiacs.

As a response, in the specific area of media technological history, there has been a move over recent decades towards a second, less popularly understood approach that, in essence, denies technology as the driver of social change. Instead, society is conceived of as the major factor determining the technological agenda and conditioning the diffusion of the technologies it produces. This SST approach seeks to place the work of the technologist within the broader social sphere suggesting that the technological agenda is influenced by social needs and

19 Condorcet: Sketch, p. 201.

20 Winston: Media Technology and Society, pp. 133ff.

21 Ibid., pp. 208ff.

that the successful diffusion of any given technology depends on its social acceptability, its 'fit', as it were. As it denies technology a determining role in society, it tends to be less judgemental as to technology's effects, seeing them rather as consequences of other social factors.

SST's antecedents lie with the French Annaliste school of historians and date back to the 1920s. For example, Marc Bloch's classic essay on the diffusion of the watermill in Medieval Europe focuses on the social and legal structures pushing or inhibiting its introduction and says little about the technical knowledge leading to its development.²² Fernand Braudel sees the history of technology in general as a struggle between forward social movement driven by human ingenuity and advancing knowledge and an oppositional force sustained by human inertia and conservatism. He identified these contrary forces as 'accelerators' and 'brakes' governing technological change in general:

First the accelerator, then the brake: the history of technology seems to consist of both processes, sometimes in quick succession: it propels human life onward, gradually reaches new forms of equilibrium on higher levels than in the past, only to remain there for a long time, since technology often stagnates, or advances only imperceptibly between one 'revolution' or innovation and another.²³

It is therefore the case in Braudel's view that, although science and technology are "uniting today to dominate the world, such unity depends necessarily upon the role played by present-day societies, which may encourage or restrain progress, today as in the past"²⁴. What drove the changes we call the industrial revolution, changes which made the modern world, were grounded in the societal forces unleashed by early Western capitalism and the imperial expansion of Western nationalism. In other words, society always leads technology. This accounts for the fact that, for example, the industrial revolution, an entirely technology-based phenomenon, relied on no new technological knowledge. Explaining it is more effectively done by highlighting the social changes which facilitated the application of science and technology which had been, as it were, lying fallow.

From the SST standpoint, 'revolution' is clearly unlikely. Making society the prime determinate precludes it since it suggests a non-revolutionary 'fit' is an essential prerequisite if any media technology is to meet a social need. Again, this is not to argue against change but to insist that it be contextualised and its scope assessed.

It is also not to suggest that a multiplicity of smaller changes could not achieve a major evolutionary change. This is self-evident: 1900 is not 2000, 1850 is not 1950. The world is 'changed', is 'changing'. But what is significant among these

22 Bloch: "The Advent and Triumph of Watermills", pp. 136-138.

23 Braudel: *Civilisation and Capitalism*, p. 430.

24 Ibid.

changes? Separating the hoops from the pills, as I have been trying to show, is difficult, and finding tipping points turns out to be an exceptionally elusive business. We perceive the passing days but not the march of seconds.

So what about *MySpace*, *Facebook*, *YouTube*, *Second Life*— are they *Hula hoops* or *contraceptive pills*? The following considerations will not provide definite answers but only some suggestions.

Given the millions of web sites, there would appear to be a fundamental necessity to have search engines to access them; and such a need would, on common sense grounds, be of a different, more basic order than are the other social networking sites with their preponderance of self-generated, and indeed, self-centred content. In other words, the net will work without *Second Life* or *YouTube* but it would be of very much more limited use without *Google* etc. This is not, though, to say this necessity suspends the laws of the market. The search engine firms are susceptible to be overtaken by somebody with a better mousetrap, even as they themselves seem to threaten Microsoft. *Rex sedet in vertice, caveat ruinam* – is as true now as it ever was, except that capital protects its own so *ruina* can be a pretty comfortable place.

But that said, it is possible to see the supposed ‘revolutionary’ potential of the net being slowly challenged if not yet entirely suppressed. For example, we are engaged in an entirely typical legal struggle which is taking place on a number of fronts – from intellectual property to confidentiality to libel – in more than one country. This was a battle first seen with photography a century and a half ago and the hype which says cyberspace is above the rule of law is clearly absurd. Such struggles are always a prime marker of the operation of what I would characterise as a veritable ‘law of the suppression of radical potential’. It is merely a question of time and, indeed, the application of the very same now threatening technologies as technologies of control. The deal between the music industry and *YouTube* of last year is an example for that. Last year, Viacom brought an action against *Google* for *YouTube*’s blatant copyright violations.²⁵ And so would I if I had the money: because this free availability of material – of my books, for example, on *Google Book* – might well thrill some theorists and be justified by smart corporate lawyers, but what it amounts to is that my royalties are being stolen. On the other hand, the BBC’s plans for accessing its archive announced in 2003 five years later have still come to nothing. Not being of the thieving mindset of *Google* and being under threat of industrial action in ways *Google* is not, the BBC has yet to find a way round its obligations to pay those whose IP is embedding in the content – writers, artists, directors – their residuals.²⁶ One way or another, the brake hasn’t hit the floor yet. It has though, elsewhere – in Iran or China, say. I suspect that *Google*, which four years ago was being censored by Beijing would be a little

25 Wachman: “Google’s expansion”, p. 5.

26 Hogge: “Auntie Gets it Wrong”, p. 50.

less gung-ho about the brave new world than once it was.²⁷ Three years after the start of self-imposed censorship at Chinese behest, Sergey Brin, one of *Google's* founders, publicly admitted that 'on a business level, that decision to censor was a net negative.' It was more than that – it was inevitable; in this opposition of technical capacity and social needs versus the suppression of radical potential, the 'law of the suppression of radical potential' could be seen at work.

Beyond such legal and other institutional factors, there is also the question of fashion to be considered. It is, as already indicated, possible to suggest that in the music business the environment has utterly changed and that an artist's popularity can be measured in months – everybody will be famous for 15 minutes. But this is true only of the music business and phenomena such as the 'stardom' of reality television participants. With other forms of creativity, careers, as ever, can be of long, or certainly longer, duration. And, maybe, it would not be true of music either if another Rolling Stones, or Frank Sinatra were to emerge.

But perhaps this '15 minutes of fame' is also true of these much hyped non-search engine social network sites. *Facebook*, for example, suffered in January of this year its first visitor decline, of 5% to 8.5 million hits. Of course, it has grown 712% over the year and 9% over the last three months of last year and this decline could be seasonal. Or it could not. *Microsoft* has taken a minority stake and told *Facebook* users they would be reselling their net usage data²⁸ which in Germany, apparently, has been held by the courts to be illegal as on-line behaviour is deemed a constitutionally-protected 'expression of personality'²⁹.

Anyway, *Facebook* is full of politicians and corporations as well as a large number of ordinary people. Everybody is to be found on *Facebook* – so how cool can that be? Will it endure or will it share the fate of the 'Crazy Frog' ringtone, which was worth a reported €360 million in 2005 – and is hardly remembered today?³⁰ Clearly this last is a case more Hula hoop than contraceptive pill – and who is to say this is not also true of the social networking sites? The point is that a certain cynicism is crucial in this area. For example, gist to the mill of the argument about *Facebook* – that social sites might belong more to the category of the hoop than that of the pill – is the following. The story comes from *The Times* of London, a newspaper owned by a certain Rudolph Murdoch who, as already mentioned, spent around ½ billion Euros a short time ago on *MySpace*. *MySpace* has 5 million users to *Facebook's* (that is, in part, *Microsoft's*) 8 million. As a general rule, trusting the Murdoch press reporting any rival media activity is about as sensible as spending billions on acquiring websites, mobile telephone licenses or ringtone companies – or buying the Brooklyn Bridge from some guy in a bar.

27 Anon.: "China Blocking Google Says Watchdog", p. 4; Watts: "Microsoft Helps China to Censor Bloggers", p. 12.

28 Sherwin: "Web Socialities Succumb to 'Facebook' fatigue", p. 10.

29 Hogge: "Digital Spying", p. 52.

30 Webb: "Hanging Up on Ringtones", p. 1.

Given no younger sibling after a certain age would be seen dead doing what their elder brothers or sisters do, it seems to me that betting billions on the sustainability of youthful enthusiasms, which, I suspect, is what the social networking sites are essentially about, seems none too sensible. When considering the impact of new media technologies, the case for preferring SST 'thick descriptions' (Geertz) over monocausal, unidimensional technicist ones is clear. SST descriptions seek to avoid the hyperbolic (that is, seeing 'revolution' all around) better to understand the dangers of synecdoche (that is taking an advance in one part of a system as a change of the whole system) and better to finesse causality (that is, by recovering full histories and multiple contexts).

But all this does not mean that SST accounts cannot be improved. For one thing, they are, unhealthily eurocentric (and this includes the arguments developed here). For another, a media technology can, and it would seem does, have differential effects beyond simply what happens in the West and what happens elsewhere. Even within the West, impacts can differ by group, by age, by gender, by class and so on. And, finally, SST is no better in the final analysis than technicism when dealing with the vexed matter of determining tipping points.

What can be done about this? I don't know but here's a tip: if you are one of the millions of bands on the social sites, which Odlyzko calls 'the citizens band radio of the '90s', my advice is to ring Rowan on 44-207-490-4338 in London. He's the commercial director of a company called *Naked Penguin Boy* and he is a 'web-raider'. For a few thousand Euros he and his operatives will pretend to be your band's biggest fans. They'll start the word of mouth you are going to need if you want to be an overnight star supposedly completely created by the new media. He's your best bet – but do it quick because we've just started to talk about making him and all his competitors illegal.

REFERENCES

- Allen, Katie: "Still Waiting: Record Labels Long for Digital to Rescue Dwindling Sales", in: *The Guardian*, Financial Section, 18 January (2007), p. 27.
- Anon.: "Slumping Film Sales Leave Kodak Figures Deep in Red", in: *The Guardian*, 2 August (2006), p. 23.
- Anon.: "China Blocking Google Says Watchdog", in: *i-Tech*, 2 December (2004), p. 4.
- Barlow, John Perry: "A Declaration of the Independence of Cyberspace", <http://homes.eff.org/~barlow/Declaration-Final.html>, 14.08.2008.
- Bloch, Marc: "The Advent and Triumph of the Watermills" (1935), in: *Land and Work in Medieval Europe*, Berkeley, CA 1967, pp. 136-168.
- Braudel, Fernand: *Civilisation and Capitalism, 15th-18th Century: The Structure of Everyday Life*. New York, NY 1981.
- Bulkley, Kate: "The Digital Persuaders", in: *The Media Guardian*, Extra Section, 24 September (2007), p. 1.

- Condorcet, Antoine Nicolas: *Sketch for a Historical Picture of the Progress of the Human Mind* (1795), London 1955.
- Davos, Jane Martinson: "China Censorship Damaged US, Google Founders Admit", in: *The Guardian*, Financial Section, 27 January (2007), p. 38.
- Gibson, Owen: "The Man Who Put Teenagers' Lives Online", in: *The Media Guardian*, 3 July (2006), p. 5.
- Handysides, Tom: "CD or Download", in: *The Guardian*, Leaders and Replies, 7 June (2006), p. 31.
- Hogge, Becky: "Digital Spying", in: *New Statesman*, 31 March (2008), p. 52.
- Hogge, Becky: "Auntie Gets it Wrong", in: *New Statesman*, 2 April (2007), p. 43.
- Lillington, Karlin: "A Ninety Billion Dollar Mistake", in: *The Guardian Online*, 23 August, (2001), p. 3.
- Markoff, John: "A Mold at Microsoft Starts to Show Cracks", in: *International Herald Tribune*, 11 February (2008), p. 13.
- Naughton, John: "Giants of Flesh and Steel Rear Ugly Head in Cyberspace", in: *The Observer*, Business Section, 12 December (2002), p.9.
- Sherwin, Adam: "Web Socialities Succumb to 'Facebook Fatigue'", in: *The Times online*, 22 February (2008), p. 10.
- Teather, David: "Kodak Pulls Shutter Down on its Own Past", in: *The Guardian*, Technology News and Features Section, 23 January (2004), p. 23.
- Wachman, Richard: "Goggle's Expansion is Coming at a Price: It's Losing its Popularity", in: *The Observer*, Business & Media Section, 25 March (2007), p.5.
- Watts, Jonathan: "Microsoft Helps China to Censor Bloggers", in: *The Guardian*, Technology News and Features Section, 15 June (2005), p. 12.
- Webb, Adam: "Hanging Up on Ringtones", in: *The Guardian*, Technology News and Features Section, 28 June (2007), p. 1.
- Williams, Raymond: *The Politics of Modernism*. New York, NY, 1989.
- Williams, Raymond: *Television: Technology and Cultural Form*, London, 1974.
- Winston, Brian: *Messages: Free Expression, Media and the West from Gutenberg to Google*, London 2005.
- Winston, Brian: *Media, Technology & Society. A History: From the Telegraph to the Internet*, London 1998.
- Wray, Richard: "Last Chance Saloon for Lara Croft Creator", in: *The Guardian*, Financial Section, 1 March (2008), p. 39.
- Wray, Richard/Clark, Andrew: "Music Stars Set to Reap YouTube Windfall", in: *The Guardian online*, 30 August (2007), p. 7.