

**Richard Barbrook\***

## **The Regulation of Liberty: free speech, free trade and free gifts on the Net**

‘What makes the constitution of a state really strong and durable is such a close observance of [social] conventions that natural relations and laws come to be in harmony on all points, so that the law... seems only to ensure, accompany and correct what is natural.’ - Jean-Jacques Rousseau.<sup>1</sup>

### **The State in Cyberspace**

The rapid expansion of e-commerce depends upon effective legal regulation of the Net. As in the rest of the economy, courts and police are needed to enforce the ‘rules of the game’ within on-line marketplaces. Theft remains theft even when committed with the latest technology. Since the Net encourages its own forms of anti-social behaviour, governments also have to update their legislation to counter the new threats from so-called ‘cyber-terrorism’.<sup>2</sup> Trespass laws must now protect computer systems as well as physical buildings. Not surprisingly, media corporations expect that the courts and the police will carry on protecting their intellectual property. Anyone who distributes unauthorised copies of copyright material over the Net must be punished. Anyone who invents software potentially useful for on-line piracy should be criminalised. Like other companies, media corporations need a secure legal framework for conducting e-commerce with their customers. As in the old Wild West, business will only prosper once law and order is established on the new electronic frontier.<sup>3</sup>

This new common sense has displaced the fashionable anti-statism of a few years ago. According to the Californian ideology, national governments are incapable of controlling the global system of computer-mediated communications. Instead, individuals and businesses will compete to provide goods and services within unregulated on-line marketplaces. The advance to the hi-tech future is simultaneously the return to the liberal past.<sup>4</sup> Above all, this nostalgic ‘New Paradigm’ supposedly not only delivers greater economic efficiency, but also extends individual freedom. For instance, state regulation of broadcasting will become obsolete once everyone can buy and sell programming over the Net. Just like after the American revolution, public institutions will only be needed to

---

\* Richard Barbrook is co-ordinator of the Hypermedia Research Centre, University of Westminster, <[www.hrc.wmin.ac.uk](http://www.hrc.wmin.ac.uk)>. This article is published in *Science as Culture* Vol. 11, N.2. Posted here by permission of the author.

<sup>1</sup> Jean-Jacques Rousseau, *The Social Contract*, page 98.

<sup>2</sup> For instance, the British government is introducing legislation which includes any actions which ‘seriously interfere with or seriously disrupt an electronic system’ within its definition of ‘terrorism’. See Will Knight, ‘Hackers Will Become Terrorists Under New Law’, page 1.

<sup>3</sup> For an analysis of increasing legal regulation of the Net, see Lawrence Lessig, *Code*.

<sup>4</sup> See Richard Barbrook and Andy Cameron, ‘The Californian Ideology’.

provide minimal ‘rules of the game’ for people to trade information with each other.<sup>5</sup> In their constitution, the Founding Fathers formally prohibited government censorship of the press: the First Amendment. This ‘negative’ concept of media freedom emphasised the absence of legal sanctions against publishing dissident opinions. Like their fellow entrepreneurs, writers and publishers should be able to produce what their customers want to buy. Free speech is free trade.<sup>6</sup>

For decades, experts and entrepreneurs have predicted that the emerging information society would realise the most libertarian interpretations of the First Amendment. They have never doubted the eventual triumph of their hi-tech vision: one virtual marketplace for trading information commodities. Instead of buying physical objects, people would purchase on-line versions of books, newspapers, films, television, radio, music, software and games - and also sell their own creations. Above all, this pay-per-use form of computer-mediated communications would have copyright protection hardwired into its social and technical architecture. The First Amendment is trading intellectual property within cyberspace.

‘Anyone with a computer and some organised information located on it can offer the information for sale. The customers are as close to the data base as their telephone. Publishing of information is thus likely to become a more competitive industry...’<sup>7</sup>

Intellectual property has long been seen as a commodity just like all other commodities. Yet, at the same time, the sellers of information have always wanted to avoid fully alienating their products to their customers. Even on primitive presses, the costs of reproducing existing publications were very much lower than making the first copy of a new work. As well as justified by liberal philosophy, copyright laws were also a pragmatic solution to the problem of plagiarism. The state enforced the monopoly of particular individuals over reproducing specific items of information to reward their creativity.<sup>8</sup> Unlike political censorship, liberals believed that this economic censorship was essential for media freedom. For instance, the Founding Fathers included copyright protection alongside the First Amendment within the American constitution. If free speech was synonymous with free trade, the state had to defend intellectual property.<sup>9</sup>

In early copyright legislation, the ownership of information was always conditional. Just as media commodities were never fully alienated, no one could claim absolute ownership over intellectual property. Instead, copyrights could be lawfully expropriated for a ‘fair use’ in the public interest, such as political debate, education, research or artistic

---

<sup>5</sup> See Mitch Kapor, ‘Where is the Digital Highway Really Heading?’.

<sup>6</sup> For an analysis of the origins of the First Amendment in English liberalism, see Leonard Levy, *Emergence of a Free Press*. An English liberal mandarin later defined ‘negative’ freedom as: ‘...the area within which the subject - a person or group of persons - is or should be left to do or be what he [or she] is able to do or be, without interference by other persons...’ Isaiah Berlin, ‘Two Concepts of Liberty’, pages 121-2.

<sup>7</sup> Ithiel de Sola Pool, *Technologies of Freedom*, page 211.

<sup>8</sup> See Christopher May, *A Global Political Economy of Intellectual Property Rights*, pages 16-44.

<sup>9</sup> See Richard Barbrook, *Media Freedom*, pages 7-18; and Leonard Levy, *Emergence of a Free Press*, pages 220-281.

expression.<sup>10</sup> However, during the last few decades, these restrictions on copyright ownership have been slowly disappearing. According to hi-tech neo-liberals, all information must be transmuted into pure commodities traded within unregulated global markets. In their Californian ideology, media freedom is the 'negative' freedom from state interference. Yet, in practice, the marketisation of information requires more legal regulation of the Net. For instance, national laws and international treaties have already been adopted to cover the on-line trading of media commodities. Even if nation states give up trying to censor the content of the Net, their courts and police will be needed more than ever to defend the ownership of copyrights.<sup>11</sup> As John Locke emphasised long ago: 'The great and *chief end* of... Mens... putting themselves under Government... *is the preservation of their Property.*'<sup>12</sup>

### The Digital Panopticon

While the Net remained a predominantly text-based system used by academics and hobbyists, media corporations could happily ignore the emergence of this participatory form of computer-mediated communications. According to the experts, the majority of the population was only interested in new information technologies which would offer a wider choice of media commodities. However, this ostrich strategy became increasingly untenable as more and more people went on-line. Along with making their own entertainment, Net users also enjoy sharing information with each other. For instance, many owners of music CDs give MP3 copies to their on-line friends - and even to complete strangers. Much to their horror, media corporations have slowly realised that the Net threatens the core of their business: the sale of intellectual property.

The owners of copyrights are now demanding that the state launches the 'war on copying'.<sup>13</sup> The courts and police must prevent consenting adults from sharing information with each other without permission. In a series of high-profile cases, industry bodies are suing the providers of technical facilities for swapping copyright material.<sup>14</sup> At the same time, media corporations are experimenting with encryption and other software programs which prevents unauthorised copying.<sup>15</sup> However, this anti-piracy offensive is proving to be only partially effective. For instance, the music industry's attempts to close down Napster simply encourages people to install more sophisticated software for

---

<sup>10</sup> See Christopher May, *A Global Political Economy of Intellectual Property Rights*, pages 45-66.

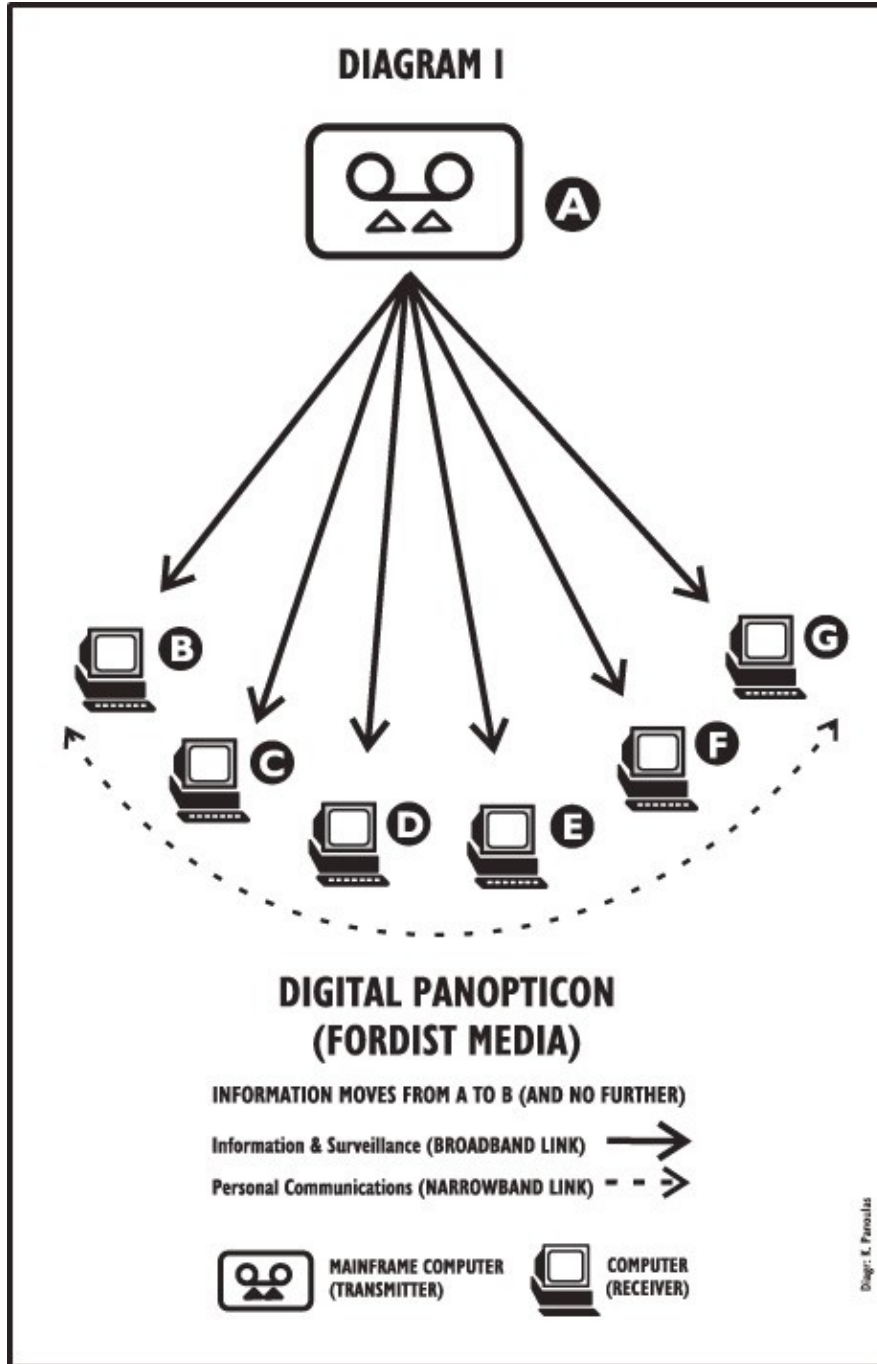
<sup>11</sup> Despite denouncing state regulation as obsolete, Newt Gingrich's neo-liberal think-tank still saw that: 'Defining property rights in cyberspace is perhaps the single most urgent and important task for government information policy.' The Progress and Freedom Foundation, *Cyberspace and the American Dream*, page 11.

<sup>12</sup> John Locke, *Two Treatises of Government*, Mentor, New York 1965, page 395. For a socialist remix of this liberal analysis, see Eugeny Pashukanis, *Law and Marxism*.

<sup>13</sup> This analogy with the repressive 'war on drugs' is made in Richard Stallman, 'Freedom - or Copyright?', page 2.

<sup>14</sup> See the Recording Industry Association of America, 'RIAA Lawsuit Against Napster'; and the Motion Picture Association of America, 'DVD-DeCSS Press Room'.

<sup>15</sup> For instance, all the major record labels are members of a consortium to develop encryption methods for copyright-protected music, see the Secure Digital Music Initiative website.



swapping music.<sup>16</sup> Even worse, the failure to agree a common method of encryption means that MP3 has become the de facto standard for distributing music over the Net. Contrary to neo-liberal prophecies, the transmutation of information into commodities is becoming more difficult in the digital age.

<sup>16</sup> For instance, see the Gnutella and Freenet websites.

Since intellectual property can't be protected within the existing Net, media corporations want to impose a top-down form of computer-mediated communications in its place: the digital Panopticon.<sup>17</sup> If everyone's on-line activities could be continually monitored, nobody would dare to defy the copyright laws. When information was sold as a commodity, media corporations would be able to control its subsequent uses. Across the world, security agencies are already developing 'Big Brother' technologies for placing every user of the Net under constant surveillance. For instance, the Chinese regime deters dissent by spying on the on-line activities of its citizens. Even the elected governments of the USA and the EU like snooping on the e-mails of their real or imaginary enemies.<sup>18</sup> According to the Californian ideology, such oppressive behaviour would become an anachronism in the unregulated virtual marketplace. Yet, only a few years later, it is commercial companies which are pressing for the monitoring of private Net use to defend their intellectual property. Until there is some fear of detection, people will carry on spontaneously sharing copyright material with each other. Ironically, the 'negative' freedom of the First Amendment now justifies the totalitarian ambitions of the digital Panopticon. As the head of the Motion Picture Association of America warns: 'If you can't protect that which you own, then you don't own anything.'<sup>19</sup>

Despite the futurist rhetoric of its proponents, the digital Panopticon perpetuates an earlier stage of industrial evolution: Fordism. Ever since the advent of modernity, each transient burst of technological and social innovation has been idealised as an a timeless utopia. During the last century, the Fordist factory didn't just become the dominant economic paradigm, but also provided the model for politics, culture and everyday life.<sup>20</sup> The media corporations now want to impose this top-down structure on computer-mediated communications. Like workers on an assembly-line, users of the digital Panopticon will be under constant surveillance from above. Like viewers of television, they can only passively consume media produced by others. The new information society must be built in the image of the old industrial economy. Free speech should only exist as media commodities.

### **The Hi-Tech Gift Economy**

Many Left intellectuals also believe that the Net will - sooner or later - be replaced by the digital Panopticon. How could the version of computer-mediated communications devised by poor academics and insignificant nerds triumph over the structure championed by wealthy and influential media corporations?<sup>21</sup> Ironically, these gurus disprove their own masochistic predictions when they themselves go on-line. Like everyone else, they

---

<sup>17</sup> See Howard Rheingold, *The Virtual Community*, pages 289-296. The dystopian vision of the Net is inspired by the symbol of oppressive modernity in Michel Foucault, *Discipline and Punish*.

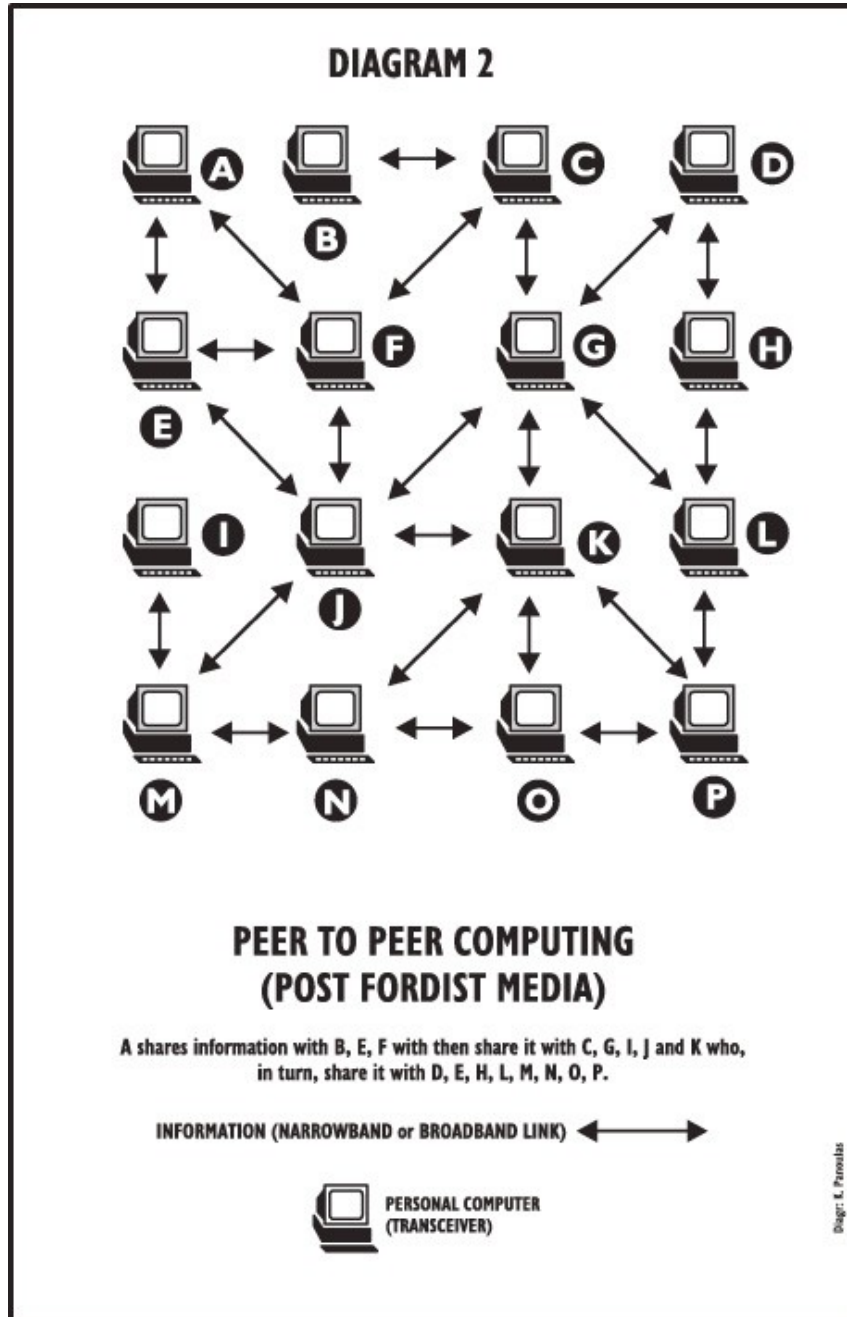
<sup>18</sup> See Elmo Recio, 'The Great Firewall of China'; and Duncan Campbell, 'Inside Echelon'.

<sup>19</sup> Jack Valenti talking about the potential threat from the DeCSS decryption program in 'Film Studios Bring Claim Against DVD Hackers in Federal Court'.

<sup>20</sup> See Simon Clarke, 'What in the F---'s Name is Fordism'.

<sup>21</sup> For instance, Robert McChesney says: 'It's almost an iron law of US communication[s] media... that... the corporate sector comes in, and... muscles all... other people out of the way and takes it over.' Corporate Watch, 'Towards a Democratic Media System', page 3.

don't primarily use the Net to consume media, but to send e-mails, swap information, conduct on-line research and participate in network communities. While there can be nothing new about more television, interactive collaboration over the Net is novel. The digital Panopticon is a future which is already history.



For the emerging information society is being built according to principles laid down by the scientists who invented the Net. Funded by the state and foundations, academics collaborate with each other by giving away their findings in journals and at conferences.

Scientists had no need for on-line systems for trading information commodities. Instead, they built the code of the Net in the image of the academic gift economy. Designing for their own use, they invented a form of computer-mediated communications for sharing knowledge within a single virtual space: the 'intellectual commons'.<sup>22</sup> Above all, the pioneers of the Net knew that the publication of findings across many different books and journals was hampering scientific research. From Vannevar Bush to Tim Berners-Lee, they developed technologies which could overcome this fragmentation of academic knowledge. The passive consumption of fixed pieces of information would become the participatory process of 'interactive creativity'.<sup>23</sup>

As the Net spread outside the university, its new users quickly discovered the benefits of sharing knowledge with each other. There has never been much demand for the equal exchange of commodities when people can access the labour of a whole community in return for their own individual efforts.<sup>24</sup> Many non-academics are also striving to overcome the fixed boundaries imposed by the commodification of information. For instance, musicians have long appropriated recordings for DJ-ing, sampling and remixing.<sup>25</sup> The popularity and capabilities of the Net is intensifying these ambiguities within the economics of music-making. The MP3 format doesn't just make the piracy of copyright material much easier. As importantly, the social mores and technical structure of the Net encourages enthusiasts to make their own sounds. The passive consumption of unalterable recordings is evolving into interactive participation within musical composition.<sup>26</sup>

What began inside scientific research is now transforming music-making and many other forms of cultural expression. Back in the early-1990s, only a few academics and hobbyists could access this open form of computer-mediated communications. A decade later, almost every academic discipline, political cause, cultural movement, popular hobby and private obsession has a presence on the Net. Whether for work or for pleasure, people are creating websites, bulletin boards, listservers and chat rooms. Although only a minority are now engaged in scientific research, all Net users can participate within the hi-tech gift economy. A few hope that network communities are prefiguring the co-operative and ecological societies of the future. Some are convinced that 'interactive creativity' is the cutting-edge of modern art. Most simply participate within on-line projects as a leisure activity. Far from being displaced by the digital Panopticon, the 'intellectual commons' of the Net continues to expand at an exponential rate. Free speech is a free gift.

### What's Left of Copyright?

---

<sup>22</sup> Lawrence Lessig, *Code*, page 141. Also see Michael Hauben and Rhonda Hauben, *Netizens*, page ix.

<sup>23</sup> Tim Berners-Lee, 'Realising the Full Potential of the Web', page 5. Also see Richard Barbrook, 'The Hi-Tech Gift Economy'; and 'Cyber-communism'.

<sup>24</sup> See Rishab Ghosh, 'Cooking Pot Markets'; and Richard Barbrook, 'The Hi-Tech Gift Economy'.

<sup>25</sup> See Bill Brewster and Frank Broughton, *Last Night a DJ Saved My Life*; and Sheryl Garratt, *Adventures in Wonderland*.

<sup>26</sup> See Jacques Attali, *Noise*, pages 133-148. Also see Romandson, 'Interactive Music'.

The Net is now proclaimed as the new paradigm of society. Business, government and culture are supposed to restructure themselves in its image: flexible, participatory and self-organising.<sup>27</sup> Although often seen as pioneers of the hi-tech future, media corporations are terrified of this emerging paradigm. For the rapid growth of the Net is exposing the contingency of their intellectual property. As information separates from physical products, copyright loses its apparent basis in nature. Quite spontaneously, most people are opting to share knowledge rather than to trade media commodities over the Net. Technological progress is symbiotic with social evolution. Free speech can flourish without free trade.

The media corporations are desperate to reverse history back to the previous paradigm: the Fordist factory. As in old sci-fi stories, they dream of giant mainframes spying upon everyone's on-line activities. Like members of the secret police, the owners of copyright are nostalgic for the Cold War days of 'Big Brother'. However, history has moved on. The centralised vision of computer-mediated communications is already technically obsolete. How much computing power would be needed to make a detailed analysis of every piece of data in the information flows passing across the Net? How could constant top-down surveillance be imposed on all peer-to-peer file-sharing within cyberspace? But, without constant monitoring from above, the effectiveness of encryption and other security devices is limited. As hackers have repeatedly proved, anything which is encoded will be eventually decoded. When no one is looking, media commodities will spontaneously transmute into free gifts on the Net.

Since there is no technological fix for protecting copyright, the media corporations can only preserve their wealth in one way: state power. The police and the courts must deter people from pirating intellectual property or inventing software for making unauthorised copies. The social mores and software codes of the Net must be criminalised. Only fear of punishment can force everyone inside the digital Panopticon. For the media corporations, the 'negative' form of media freedom is now synonymous with state enforcement of economic censorship. The law must be obeyed. The Net must be replaced with the digital Panopticon. Free trade is more important than free speech.

According to the Free Software Foundation, the growing contradiction between legality and reality within the Net can only be resolved by extending the scope of the First Amendment. The economic interests of the few should no longer take precedence over the political liberties of the many. The 'negative' concept of media freedom must now apply to private corporations as well as public institutions. Above all, the state should refrain from enforcing not only political censorship, but also economic censorship.<sup>28</sup> As privileges of copyright disappear, information should be regulated in a more libertarian way: 'copyleft'. Although producers should still be able to prevent their own work from

---

<sup>27</sup> From academic research to management theory, this new paradigm now fascinates the cutting-edge of intellectual life. For instance, see Manuel Castells, *The Rise of the Network Society*; and Jonas Ridderstråle and Kjell Nordström, *Funky Business*.

<sup>28</sup> See Richard Stallman, 'Freedom - or Copyright?'. Some American judges have already defined computer programming as a form of free speech, see Patricia Jacobus, 'Court: Programming languages covered by First Amendment'.



being claimed by others, everyone must be allowed to copy and alter information for their own purposes. Free speech is freedom from compulsory commodification.<sup>29</sup>

Even this proposal isn't radical enough for some Net pioneers. For instance, Tim Berners-Lee decided that the original programs of the web should be placed in the public domain. Instead of making proprietary software for sale in the marketplace, this inventor was developing tools for building the 'intellectual commons'. His web programs were much more likely to be adopted as common standards if all residual traces of individual ownership were removed. Being a scientist funded by EU taxpayers, Tim Berners-Lee was happy to give away his research to anyone who could benefit from more accessible computer-mediated communications. Owned by nobody, the web could become the common property of all.<sup>30</sup>

In the prophecies of the hi-tech neo-liberals, all information was going to be inevitably transformed into unalloyed commodities. Inside the digital Panopticon, everyone would be forced to prioritise a 'single business model': trading intellectual property.<sup>31</sup> Yet, when given a choice, almost everybody prefers the bottom-up Net over this top-down version of computer-mediated communications. Crucially, the absence of intellectual property within the Net has never been an obstacle to the successful commercialisation of computer-mediated communications. On the contrary, many dot-com entrepreneurs have discovered that more profits can be made outside the protection of the digital Panopticon. Businesses trade more efficiently with their suppliers and their customers when everyone uses open source software. Employees collaborate with each other much more easily within the non-proprietary architecture of the Net.<sup>32</sup> Despite their wealth and influence, media corporations are unlikely to persuade their fellow capitalists to adopt the digital Panopticon. While serious money can be made on the existing Net, why should businesses adopt a less flexible and more intrusive form of computer-mediated communications?

Even for the trading of intellectual property, there is no pressing need for investing in expensive copyright protection systems. Information can still be commodified through other tried-and-tested methods: advertising, real-time delivery, merchandising, data-mining and support services.<sup>33</sup> While these techniques remain profitable, the weakening of intellectual property within the Net can be tolerated. Increasingly, information exists as both commodity and gift - and as hybrids of the two. No longer always fixed in physical objects, the social distinction between proprietary and free information becomes contingent. For instance, the Linux operating system can either be downloaded without payment from the Net or be purchased on a CD-rom from a dot-com company.<sup>34</sup> This hybrid existence is not confined to 'cutting edge' software. For instance, the same dance tune is sold on vinyl, given away on MP3 and sampled to create new sounds. The passive

---

<sup>29</sup> See Free Software Foundation, *What is Copyleft?*.

<sup>30</sup> See Tim Berners-Lee, *Weaving the Web*, pages 78-80.

<sup>31</sup> See Tim Berners-Lee, *Weaving the Web*, pages 70-71.

<sup>32</sup> See John Hagel and Arthur Armstrong, *net.gain*.

<sup>33</sup> See Esther Dyson, *Release 2.0*, pages 131-163.

<sup>34</sup> See Robert Young, 'How Red Hat Software Stumbled Across a New Economic Model and Helped Improve an Industry'.

consumption of fixed pieces of information now co-exists with the participatory process of ‘interactive creativity’. Free speech is both free trade and free gifts.

## Making Media

According to current copyright legislation, this new form of free speech is simply a new type of theft. Information must always remain a commodity within cyberspace. Yet, within the Net, free speech is evolving into the fluid process of ‘interactive creativity’. Information exists as commodities, gifts and hybrids of the two. Oblivious to this growing contradiction, politicians carry on tightening the legal protection of copyright at both national and international levels.<sup>35</sup> They are determined to help their local media corporations to compete successfully within the global marketplace. As a result, the letter of law criminalises the on-line activities of almost every Net user. For instance, giving away bootleg MP3s is stealing the intellectual property of media corporations. The ‘negative’ concept of media freedom prohibits political censorship only to justify economic censorship. Free trade is state power.<sup>36</sup>

Yet, in their daily lives, everyone knows that there is almost no chance of being punished for swapping MP3s. The existing copyright laws are increasingly unenforceable within the Net. If only for pragmatic reasons, the concept of media freedom now needs to be extended beyond freedom from political censorship. For instance, in nineteenth century Europe, Karl Marx argued that free speech shouldn’t be confined within free trade. The Left had to struggle not only against political censorship, but also economic censorship. Crucially, the removal of legal controls was an essential precondition, but not a sufficient foundation for free speech. Everyone also had to have access to the technologies for expressing themselves: the ‘positive’ concept of media freedom.<sup>37</sup> During the Fordist epoch, the Left almost forgot this libertarian definition of free speech. For technical and economic reasons, ordinary people appeared to be incapable of making their own media. Instead, the Left supported public service broadcasting so its leaders could gain access to the airwaves. Free speech was restricted to elected politicians.<sup>38</sup>

With the advent of the Net, this limited vision of media freedom is becoming an anachronism. For the first time, ordinary people can be producers as well as consumers of information. Marx’s ‘positive’ concept of media freedom is now pragmatic politics. Instead of making media for them, the state can help people to make their own media. For instance, public service broadcasters can nurture network communities and telecoms regulators can encourage infrastructure investment.<sup>39</sup> Above all, the state must reverse the

---

<sup>35</sup> See Christopher May, *A Global Political Economy of Intellectual Property Rights*.

<sup>36</sup> See Lawrence Lessig, *Code*, pages 30-60.

<sup>37</sup> See Karl Marx, ‘Debates on Freedom of the Press’. In contrast with its ‘negative’ predecessor, ‘positive’ freedom is defined as: ‘I wish to be... a doer - deciding, not being decided for, self-directed and not acted upon... by other men as if I was... a slave incapable of... conceiving goals and policies of my own and realising them.’ Isaiah Berlin, ‘Two Concepts of Liberty’, page 131. For this socialist concept of political rights, also see Karl Marx, ‘On the Jewish Question’.

<sup>38</sup> See Richard Barbrook, *Media Freedom*, pages 55-73.

<sup>39</sup> See Richard Barbrook and Andy Cameron, ‘The Californian Ideology’, pages 63-68.

recent tightening of the copyright laws. For the 'positive' concept of media freedom precludes vigorous economic censorship. The widespread 'fair use' of copyright material should be recognised in law as well as in practice. The rigid enforcement of intellectual property must give way to official toleration of more flexible forms of information: bootlegs, copyleft, open source and public domain. 'Fair use' is free speech.<sup>40</sup>

For most people, the weakening of copyright protection is someone else's problem. They are unconcerned that trading of commodities in the old media must co-exist with the circulation of gifts in the new media.<sup>41</sup> Even neo-liberals are realising that the trading of physical commodities is much easier outside the digital Panopticon. While e-commerce will always depend upon legal regulation, 'interactive creativity' among Net users has little need for courts and police. When copying is ubiquitous, punishing people for stealing intellectual property will seem perverse. Instead of formal laws, most on-line activities can be regulated by the spontaneous rules of polite behaviour.<sup>42</sup>

'The more perfect civilisation is, the less occasion has it for government, because the more does it regulate its own affairs, and govern itself...'<sup>43</sup>

Sooner or later, the state will abandon its attempts to impose economic censorship on the Net. Even the media corporations will eventually have to accept the demise of information Fordism. Instead of copyright enforcement, government intervention can focus on extending and improving access to the Net for all people. The 'negative' freedom from state censorship must evolve into the 'positive' freedom to make media. In the age of the Net, free speech can become: '...the right to make noise... to create one's own code and work... the right to make the free and revocable choice to interlink with another's code - that is, the right to compose life.'<sup>44</sup>

## Bibliography

Jacques Attali, *Noise: the political economy of music*, University of Minnesota Press, Minneapolis 1985.

Richard Barbrook, *Media Freedom: the contradictions of communications in the age of modernity*, Pluto, London 1995.

Richard Barbrook, 'The Hi-Tech Gift Economy' in nettime (editors), *Readme!: ASCII culture and the revenge of knowledge*, Autonomedia, New York 1998, pages 132-139.

---

<sup>40</sup> See Richard Barbrook, 'Cyber-communism', pages 26-35.

<sup>41</sup> For a discussion of the 'fragmentation of copyright', see Christopher May, *A Global Political Economy of Intellectual Property Rights*, pages 144-157.

<sup>42</sup> Among early users of computer-mediated communications, such spontaneous self-regulation was dubbed 'netiquette', see Michael Hauben and Rhonda Hauben, *Netizens*, pages 63-4.

<sup>43</sup> Tom Paine, *Rights of Man*, page 165.

<sup>44</sup> Jacques Attali, *Noise*, pages 132.

Richard Barbrook, 'Cyber-communism: how the Americans are superseding capitalism in cyberspace', *Science as Culture*, Number 1, Volume 9, 2000, pages 5-40.

Richard Barbrook and Andy Cameron, 'The Californian Ideology', *Science as Culture*, No. 26, Vol. 6 Part 1, 1996, pages 44-72. <ma.hrc.wmin.ac.uk/ma.theory.4.2.db>.

Isaiah Berlin, 'Two Concepts of Liberty' in *Four Essays on Liberty*, Oxford University Press, Oxford 1969, pages 118-172.

Tim Berners-Lee, 'Realising the Full Potential of the Web', <www.w3.org/1998/02/Potential.html>.

Tim Berners-Lee with Mark Fischetti, *Weaving the Web: the past, present and future of the World Wide Web by its inventor*, Orion Business Books, London 1999.

Bill Brewster and Frank Broughton, *Last Night a DJ Saved My Life: the history of the disc jockey*, Headline, London 1999.

Duncan Campbell, 'Inside Echelon: the history, structure and function of the global surveillance system known as Echelon', *Telepolis*, 25th July 2000, <www.heise.de/tp/english/inhalt/te/6929/1.html>.

Manuel Castells, *The Rise of the Network Society*, Blackwell, Oxford 1996.

Simon Clarke, 'What in the F---'s Name is Fordism' in Nigel Gilbert, Roger Burrows & Anna Pollert (editors), *Fordism and Flexibility: divisions and changes*, Macmillan, London 1992, pages 13-30.

Corporate Watch, 'Towards a Democratic Media System: interview with Robert McChesney', 1998, <www.corpwatch.org/trac/internet/corpspeech/mcchesney.html>.

Esther Dyson, *Release 2.0: a design for living in the digital age*, Viking, London 1997.

Michel Foucault, *Discipline and Punish: the birth of prison*, Penguin, London 1979.

Free Software Foundation, *What is Copyleft?*, 1996, <www.fsf.org/copyleft/copyleft.html>.

Freenet, <freenet.sourceforge.net>.

Sheryl Garratt, *Adventures in Wonderland: a decade of club culture*, Headline, London 1998.

Rishab Ghosh, 'Cooking Pot Markets: an economic model for the trade in free goods and services on the Internet', *First Monday*, *First Monday*, volume 3, number 3, March 1998,

<[www.firstmonday.org/issues/issue3\\_3/ghosh/index.html](http://www.firstmonday.org/issues/issue3_3/ghosh/index.html)>.

Gnutella, <[gnutella.wego.com](http://gnutella.wego.com)>.

John Hagel and Arthur Armstrong, *net.gain: expanding markets through virtual communities*, Harvard Business School Press, Boston MA, 1997.

Michael Hauben and Rhonda Hauben, *Netizens: on the history and impact of Usenet and the Internet*, IEEE Computer Society Press, Los Alamitos CA, 1997.

Patricia Jacobus, 'Court: Programming languages covered by First Amendment', *CNET news.com*, 4th April 2000, <[news.cnet.com/news/0-1005-202-1641004.html](http://news.cnet.com/news/0-1005-202-1641004.html)>.

Mitch Kapor, 'Where is the Digital Highway Really Heading?', *Wired*, 1.3, July/August 1993, pages 53-59, 94.

Will Knight, 'Hackers Will Become Terrorists Under New Law', *Zdnet*, 19th February 2001, <[www.zdnet.co.uk/news/2001/7/ns-21060.html](http://www.zdnet.co.uk/news/2001/7/ns-21060.html)>.

Lawrence Lessig, *Code: and other laws of cyberspace*, Basic Books, New York 1999.

Leonard W. Levy, *Emergence of a Free Press*, Oxford University Press, Oxford 1985.

John Locke, *Two Treatises of Government*, Mentor, New York 1965.

Karl Marx, 'Debates on Freedom of the Press' in Karl Marx and Friedrich Engels, *Collected Works, Volume 1: 1835-43*, Lawrence & Wishart, London 1975, pages 132-181.

Karl Marx, 'On the Jewish Question' in Karl Marx, *Early Writings*, Penguin, London 1975.

Christopher May, *A Global Political Economy of Intellectual Property Rights: the new enclosures?*, Routledge, London 2000.

Motion Picture Association of America, 'DVD-DeCSS Press Room', Motion Picture Association of America, <[www.mpa.org/Press/default.HTM](http://www.mpa.org/Press/default.HTM)>.

Motion Picture Association of America, 'Film Studios Bring Claim Against DVD Hackers in Federal Court', Motion Picture Association of America, 14th January 2000, <[www.mpa.org/Press/default.HTM](http://www.mpa.org/Press/default.HTM)>.

Tom Paine, *Rights of Man*, Penguin, London 1969.

Eugeny Pashukanis, *Law and Marxism: a General Theory*, Ink Links, London 1978.

The Progress and Freedom Foundation, *Cyberspace and the American Dream: A Magna Carta for the Knowledge Age*, August 1994, <[www.pff.org/position.html](http://www.pff.org/position.html)>.

Elmo Recio, 'The Great Firewall of China: cyber-censorship', <[polywog.navpoint.com/sociology/devnat/firewall\\_of\\_china](http://polywog.navpoint.com/sociology/devnat/firewall_of_china)>.

Recording Industry Association of America, 'RIAA Lawsuit Against Napster', <[www.riaa.org/napster\\_legal.cfm](http://www.riaa.org/napster_legal.cfm)>.

Howard Rheingold, *Virtual Communities*, Secker & Warburg, London 1994.

Jonas Ridderstråle and Kjell Nordström, *Funky Business: talent makes capital dance*, ft.com, London 2000.

Romandson, 'Interactive Music' in Adam Lowe and Simon Schaffer (editors), *N0ISE: universal language, pattern recognition, data synaesthetics*, exhibition catalogue, Kettle's Yard, Cambridge 2000.

Jean-Jacques Rousseau, *The Social Contract*, Penguin, London 1968.

Secure Digital Music Initiative, <[www.sdmi.org](http://www.sdmi.org)>.

Ithiel de Sola Pool, *Technologies of Freedom*, Belknap Press, Harvard 1983.

Richard Stallman, 'Freedom - or Copyright?', *Technology Review*, May/June 2000, <[www.techreview.com/articles/may00/stallman.htm#links](http://www.techreview.com/articles/may00/stallman.htm#links)>.

Robert Young, 'How Red Hat Software Stumbled Across a New Economic Model and Helped Improve an Industry', *Journal of Electronic Publishing*, Issue 3, Volume 4, March 1999, <[www.press.umich.edu/jep/04-03/young.html](http://www.press.umich.edu/jep/04-03/young.html)>.