

# The Basement Interviews

## NextGen Cyber Activist

**Cory Doctorow, activist, writer, blogger, public speaker, and self-styled "technology person", speaks to Richard Poynder**

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Cory Doctorow was born in Toronto in 1971, the son of Trotskyist Jewish émigrés from Eastern Europe. His mother was a teacher and organiser in the woman's movement, his father a computer programmer and one-time professional revolutionary, who later retrained as a teacher too.

As a child, Doctorow attended a series of alternative schools including SEED, the oldest free secondary school in Toronto. His education, therefore, was highly self-directed, and assessed by means of earned credits. One of Doctorow's credits was earned extramurally, "writing in a little white house on top of a mountain" in Mexico.

Doctorow developed an interest in computers at an early age, and wrote his first software program when he was nine years old — a quiz on nuclear disarmament. Science fiction writing was another early interest, and he wrote his first sci-fi story when he was twelve, while touring Europe in the back of the family car.

Although he attended four universities, Doctorow never obtained a degree. Finally dropping out from Ontario's University of Waterloo in 1993, he took a job with a New York-based CD-ROM company called Voyager. Shortly afterwards, however, the bottom fell out of the CD-ROM market, and Doctorow drifted through a series of technology jobs before, in 1999, co-founding the peer-to-peer (P2P) company, OpenCola.

After raising \$14 million in funding, and developing several well-received products, OpenCola was poised to become yet another dot.com success. In December 1999, however, the Recording Industry Association of America (RIAA) sued the popular file-sharing service Napster for copyright infringement, and the world changed for P2P forever.

As the suit also named Napster's investors — accusing them of contributory infringement and vicarious liability — investor enthusiasm for P2P technology evaporated overnight. What had been viewed as a not-to-be-missed investment opportunity was now a high-risk speculative gamble only for the foolhardy. OpenCola's backers panicked, and took control of the company, eventually selling it to Ontario-based Open Text.

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<sup>1</sup> The interview took place in May 2005 (<http://poynder.blogspot.com/2006/03/basement-interviews.html>).

Gradually squeezed out of OpenCola, Doctorow found himself once again looking for a new job. Radicalised by his experience as an entrepreneur, and now located in San Francisco, Doctorow was drawn to cyber rights organisation the Electronic Frontier Foundation (EFF), which he joined as a full-time staff member in 2001.

He also began contributing to the blog Boing Boing<sup>2</sup> — which had been founded by the former managing editor of *Wired* Mark Frauenfelder as a print "zine", but was reinvented as a blog in 2000.

While conceding that his career may appear somewhat haphazard, Doctorow insists that there has always been a common purpose in everything he has done — that of "exploring the social and cultural ramifications of technology." Sometimes, he says, this has been done in a purely theoretical way; sometimes in a practical way.

The theoretical work has primarily been conducted through the medium of science fiction writing: Doctorow sold his first story when he was 17, and published his first novel — a parable about Napster called *Down and Out in the Magic Kingdom* — when he was 31. A further two novels, and a series of short stories, have followed.

These efforts have been well received by the science fiction community: in 2000, Doctorow won the John W Campbell Award for best new writer; in 2003 *Down and Out* won the Locus Award for best first novel, and his short story *Ownz0red* was nominated for the Nebula Award; and in 2004 his short story collection *A Place So Foreign and Eight More* won the Sunburst Award for best Canadian science fiction book.

Doctorow's practical work has mainly taken the form of activism. A committed free speech advocate, he believes that the introduction of new laws designed to tame the Internet, combined with the way in which courts are interpreting existing laws in cyberspace, pose a significant threat to civil liberties.

Also convinced that ever more restrictive copyright laws — coupled with increasing use of digital rights management (DRM) technologies — threaten to erode the public domain, and chill innovation and creativity, Doctorow is a vocal critic of the media companies and politicians driving these developments.

As a writer, Doctorow clearly has a personal stake in these matters. But convinced that there are better ways of encouraging and rewarding creativity in a digital world, he has been keen to experiment with alternative approaches.

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<sup>2</sup> [http://en.wikipedia.org/wiki/Boing\\_Boing](http://en.wikipedia.org/wiki/Boing_Boing).

Consequently, all his works are published under Creative Commons licences,<sup>3</sup> which allow people to download free electronic copies of his books, and to re-distribute and rework them.

And with each new book Doctorow has tended to adopt ever more liberal licensing terms. His third novel — *Someone Comes to Town, Someone Leaves Town* — for instance, was released under a Creative Commons license that also allows people in developing countries to reuse them for commercial purposes

His readers have responded positively: *Down and Out* has been widely adapted, translated and remixed by third parties. Tim Bennett, for instance, has done a text remix<sup>4</sup> of the book; Mark Forman has serialised it as an audio podcast, adding backing music licensed under Creative Commons<sup>5</sup>; and John Sanchez has translated the novel into Opish<sup>6</sup>, "a children's language comparable to Pig Latin".

More importantly, Doctorow has discovered that liberal licensing can make good business sense. Despite *Down and Out* being available as a free download, he boasts, "that sucker has blown through *five* print editions, so I'm not worried that giving away books is hurting my sales."

In other words, Doctorow has demonstrated that providing free electronic copies of creative works is an excellent publicity strategy, and can lead to higher print sales. He also publishes audio extracts of his works as podcasts,<sup>7</sup> which he describes as "a regular feed in which I read from one of my stories for a few minutes at least once a week, from whatever friend's house, airport, hotel, conference, treaty negotiation or what-have-you that I'm currently at."<sup>8</sup>

The point, says Doctorow, is that he is not some "patchouli-scented, fuzzy-headed, 'information wants to be free' info-hippie", but an entrepreneur seeking new business models.

"I believe that we live in an era where anything that can be expressed as bits will be. I believe that bits exist to be copied. Therefore, I believe that any business-model that depends on your bits not being copied is just dumb, and that lawmakers who try to prop these up are like governments that sink fortunes into protecting people who insist on living on the sides of active volcanoes. Me, I'm

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<sup>3</sup> Creative Commons licences enable copyright holders to grant some of their rights to the public while retaining others through a variety of licensing and contract schemes including dedication to the public domain or open content licensing terms. The intention is to avoid the problems current copyright laws create for the sharing of information. [http://en.wikipedia.org/wiki/Creative\\_Commons](http://en.wikipedia.org/wiki/Creative_Commons).

<sup>4</sup> <http://blastradius.blogspot.com/2005/06/remix-kingdom.html>.

<sup>5</sup> <http://legup.blogspot.com/2005/10/and-so-it-goesdao10chap910.html>.

<sup>6</sup> <http://magicremix.pbwiki.com>.

<sup>7</sup> Podcasting is the distribution of audio or video files — including radio programs or music videos — over the Internet for listening on mobile devices and personal computers. <http://en.wikipedia.org/wiki/Podcast>.

<sup>8</sup> <http://www.craphound.com/podcast.php>.

looking to find ways to use copying to make more money and it's working: enlisting my readers as evangelists for my work and giving them free eBooks to distribute sells more books."<sup>9</sup>

His approach is also informed by a firm belief that the settled world of print will eventually fade away. By experimenting with liberal licences, he says, he hopes to obtain the necessary market intelligence to assist him become "the first writer to figure out what the next writerly business model is."

Thus rather than clinging to industrial-age business models in the way the movie and music industries are so tenaciously doing, Doctorow wants to find the new information-age models that will be needed when people stop buying print books.

And by continuing to contribute to Boing Boing — which he now co-edits with Frauenfelder and California digerati David Pescovitz and Xeni Jardin — he can not only better promote his books, but also support his activism. Today, Boing Boing boasts around 1.7 million unique readers a day, and is the most linked-to blog on the Web.

To further raise his public profile Doctorow also gives constant speeches and talks. He was also recently invited to be a judge for the inaugural Blooker prize<sup>10</sup> — "the world's first literary prize devoted to 'blooks': books based on blogs or websites."

In 2004 Doctorow relocated to London to become EFF's European Outreach Coordinator. When he discovered that his new base was just yards away from London's Speakers Corner<sup>11</sup> — an area in the north-east corner of Hyde Park hallowed by activists of free speech since the middle of the 19th Century — he immediately founded the London Copyfighters' Drunken Brunch and Talking Shop and, with like-minded "copyfighters", took to standing on a traditional soapbox to harangue the British public — and curious tourists — about the threat posed by today's increasingly onerous copyright laws.

Other regular speakers — generally a motley crew of religious zealots, pro-hunting fanatics, and anarchists — were undoubtedly puzzled to be told that the foe is no longer the devil, the red fox, or indeed the state, but powerful corporate interest groups with inscrutable acronyms like MPAA<sup>12</sup> and RIAA, along with their faceless international co-conspirators WIPO<sup>13</sup> and the WTO.<sup>14</sup>

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<sup>9</sup> <http://www.craphound.com/bio.php>.

<sup>10</sup> The Lulu Blooker Prize is sponsored by Lulu, a provider of print-on-demand books, including an increasing number of blooks. <http://www.lulublookerprize.com>.

<sup>11</sup> <http://www.speakerscorner.net/history.html>.

<sup>12</sup> The Motion Picture Association of America.

<sup>13</sup> The World Intellectual Property Organisation.

<sup>14</sup> The World Trade Organisation.

That Speakers Corner — where in the past such luminaries of social and political revolution as Karl Marx, Lenin, and George Orwell have addressed the world — should have become a venue for tirades against copyright is proof indeed that we have truly entered the information age. Class struggle, and disputes over the ownership of the means of production, is giving way to battles over the ownership of intangible things like ideas, information and creative endeavour.

Today, the debate is increasingly being framed not as a problem of toilers of the factory and the field having their labour stolen from them by exploitative capitalists, but one in which knowledge workers are having their ideas and creativity appropriated by rapacious multinational corporations, who then use the copyright system to lock them away for longer and longer periods.

And for consumers the threat is that instead of being able to buy a physical product — like a book or a CD — that they own in perpetuity, they will increasingly be asked to pay each time they want to access it.

In January, Doctorow quit his day job with the EFF to become a full-time writer. As he explained on Boing Boing: "It's something I've dreamed of since I was 12 years old, and now it's a reality."

He remains an EFF Fellow,<sup>15</sup> however, and in April announced<sup>16</sup> that he has accepted a Fulbright Visiting Research Chair at the University of Southern California's Center on Public Diplomacy. Starting September, he will spend a year at USC, teaching classes on DRM, and researching a non-fiction book on the topic — to be called *Set Top Cop: Hollywood's Secret War on America's Living Rooms*.

He also plans to transplant the Copyfighters' Drunken Brunch and Talking Shop to Venice Beach,<sup>17</sup> "substituting Bible-bashers for roller blades."

Although it sells more books, Doctorow's tireless self-promotion has attracted some criticism. Joey Nelson, a 23-year-old denizen of Los Angeles, for instance, has responded by creating the Corysucks web site.<sup>18</sup> This, he jokes, includes a "Cory Sucks Index" — based on an algorithm that measures Doctorow's self-referential utterances.

"I've read Boing Boing for a long time and only recently realised that I wasn't really interested in it at all," he explains. "And Cory's posts are the worst. It seems like everything he writes is either about his DRM crusade, his book

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<sup>15</sup> [http://www.boingboing.net/2006/01/01/cory\\_quit\\_his\\_dayjob.html](http://www.boingboing.net/2006/01/01/cory_quit_his_dayjob.html).

<sup>16</sup> <http://craphound.com/000637.html>.

<sup>17</sup> Venice, is a district in west Los Angeles, California. It is best known for its canals and beaches, but it also has a somewhat bohemian residential area as well as a colourful boardwalk.  
[http://en.wikipedia.org/wiki/Venice,\\_California](http://en.wikipedia.org/wiki/Venice,_California).

<sup>18</sup> <http://www.corysucks.com>.

signings or Disney. I figured I could write a simple algorithm to quantify how much each post sucked, so I did it."

Self-promotion aside, however, is Doctorow a good novelist? Personally I struggle with his writing, not least because — like most modern science fiction writers — he makes high demands of his readers, expecting them to come to his books with considerable pre-existing knowledge, both of the technology and the tropes of science fiction.

As one reader of *Someone Comes to Town, Someone Leaves Town* complained on Amazon.com, "This book is mainly comprised of lots and lots of technobabble, with very little substance. Is that what 'next generation SF' really is? Isn't that kind of pretentious?"<sup>19</sup>

There is, however, no doubt that Doctorow has a considerable facility with language. He has also earned the admiration and respect of the science fiction community. As fellow author Bruce Sterling puts it: "He sparkles! He fizzes! He does backflips and breaks the furniture! Science fiction needs Cory Doctorow!"<sup>20</sup>

More importantly, Doctorow is a talented, highly effective and hugely energetic activist for the free knowledge movement. For that reason, perhaps, we all need Cory Doctorow!

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I visited Doctorow one sunny May afternoon while he was still working as an EFF staffer in London.

It turned out that there was no EFF office as such: rather Doctorow had acquired squatters' rights in the Stanhope Centre, the London offices of the Freedom Forum<sup>21</sup>.

A spacious, rambling, and shabby Georgian building, the Centre had by the time of my visit been as good as abandoned by the Freedom Forum, and shortly afterwards the lease on the building expired — providing Doctorow with the final stimulus to become a full-time writer perhaps.

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<sup>19</sup> [http://www.amazon.com/gp/product/0765312786/qid=1145521775/sr=2-1/ref=pd\\_bbs\\_b\\_2\\_1/104-8126007-7359165?s=books&v=glance&n=283155](http://www.amazon.com/gp/product/0765312786/qid=1145521775/sr=2-1/ref=pd_bbs_b_2_1/104-8126007-7359165?s=books&v=glance&n=283155).

<sup>20</sup> <http://www.amazon.com/gp/product/product-description/076530953X/102-2178531-3479323>.

<sup>21</sup> The Freedom Forum is a "nonpartisan foundation dedicated to free press, free speech and free spirit for all people." <http://www.freedomforum.org>.

In any case, it was clear that Doctorow spent much of his time in London rattling around in a warren of deserted and dilapidated rooms containing little but a collection of ancient office equipment and broken furniture.

He arrived ten minutes late, having been delayed on the London Underground. "Everybody else hates the underground," he says. "I love the underground."

With thick horn-rimmed glasses and a buzz cut haircut, Doctorow looks — appropriately enough — an amalgam of nerd, sci-fi writer and EFF wonk. While dressed in the regulation nerd uniform of T-shirt and jeans, for instance, his designer stubble transmits a slightly different message. And when the interview starts it is instantly apparent that Doctorow is considerably more articulate than the average coder, and has a far greater interest in, and understanding of, "state-of-the-nation" issues than any hacker I have ever encountered.

He shows me into a large room with a row of computers along the front wall and a meeting table in the middle. Inviting me to sit down, he immediately turns his back to me, and spends the first five minutes of the interview copying data from his laptop to a grubby-looking PC.

Backing up, it seems, is a Doctorow obsession. As he explained in an interview with SF Gate in 2003,<sup>22</sup> he is "pretty paranoid" about losing data. So he backs up whenever he can, and uses at least two backup computers. Once a month he also encrypts everything, and copies it across to a remote server in Toronto. In addition, he backs up his e-mail on an iPod at the end of every day.

As he busies himself with his task I glance around the room. The soulless urban decay and creaking technology seem ready made as a backdrop for a cyberpunk novel,<sup>23</sup> conveying just the right amount of futuristic gloom.

Judging by the noise, all the dust in the room has over time been sucked into the fans of the serried ranks of ancient computers, which groan irritably. In one corner lie the remnants of what Doctorow humorously refers to as "the dead chair" — its legs snapped off; its back broken beyond repair.

In the opposite corner a dying yucca reaches half-heartedly towards the pale light filtering through the dirty window. The listlessness of its desiccated and yellowing leaves suggest that even were some sympathetic visitor to break open the

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<sup>22</sup> *Interview with Cory Doctorow*, SFGate, 23<sup>rd</sup> January 2003.

<http://dylan.tweney.com/2003/0128doctorow.html>,

<sup>23</sup> It would be inaccurate to imply that Doctorow was exclusively a cyberpunk writer. His latest novel, *Someone Comes to Town, Someone Leaves Town*, he told me, is better described as "[contemporary fantasy](#)". As he explains: "The story is about a guy named Alan, whose father is a mountain, his mother a washing machine, and his brothers a fortune teller, a dead man, an island, and three nesting Russian dolls. It also features a pre-cognitive individual who has come back from the dead. It's a kind of family revenge, wireless hacker, free speech, [magic realism](#), contemporary science fiction, political novel. In fact, it's pretty weird."

window and thrust its dying corpse into the sunshine the consequent flood of oxygen would only put it out of its misery all the sooner. The row of dead flies on the windowsill, feet pointed skywards, clearly gave up all hope long ago.

Backup finished, Doctorow turns towards me. As we talk, we sip mineral water from soiled glasses, layered with the fingerprints of previous visitors. Doctorow makes slow semaphore signals with his hands to punctuate his sentences. Occasionally he hunches over and, with a few deft movements of his fingers, conjures up carefully designed paper cranes — a habit acquired, he explains, when he gave up smoking.

On the PC behind him a succession of screensavers come and go: a picture of a wrecked London telephone box is replaced by one of the Statue of Liberty; President Bush appears briefly as a vampire, before giving way to a picture of a pizza; in its turn the pizza disappears, pushed aside by a slogan reading "Jews for Jesus." The telephone box returns, and the cycle repeats.

During the interview I find myself contrasting Doctorow's views with those I heard in my earlier meetings with Michael Hart,<sup>24</sup> Richard Stallman<sup>25</sup> and Lawrence Lessig.<sup>26</sup> the same picture of corporate greed, legal shenanigans, and diminishing public good — set against a backdrop of rapid technological change and cyber activism — only serves to reinforce my sense of having somehow stumbled into a scene in a sci-fi story.

What is different this time, however, is the international perspective Doctorow brings to the debate, along with his more astute political understanding of the situation. His views on how wealthy corporate suits and irresponsible politicians are conspiring with organisations like WIPO and the WTO to engineer at an international level legislative change that would be unacceptable on the national stage are particularly illuminating.

His more sophisticated perspective is surely a consequence of the highly politicised home he was brought up in. No doubt he has also benefited from the acquired wisdom of being a second-generation activist, having learned from the mistakes of his elders — many of whom remain politically naïve, and apparently incapable of understanding the international context in which their activism needs to be rooted.

As a staffer with the EFF, Doctorow has also developed a keen sense of the complex free speech issues raised by cyberspace. As he talks I struggle at times to follow his reasoning. For while we Europeans claim to value and protect free speech we are not generally accustomed to thinking the issues through in any depth.

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<sup>24</sup> <http://poynder.blogspot.com/2006/03/interview-with-michael-hart.html>.

<sup>25</sup> <http://poynder.blogspot.com/2006/03/interview-with-richard-stallman.html>.

<sup>26</sup> <http://poynder.blogspot.com/2006/04/interview-with-lawrence-lessig.html>.

It is only when I ask Doctorow about open spectrum that the picture begins to clear. If governments were to deregulate the wireless spectrum, he says, we could end up in a world where "the incremental cost of sending a packet [of information] from anywhere to anywhere else is zero. If that happens we end up with a lot more free speech — which is great."

I realise that what he is saying is that the more people are able to communicate with one another (the more "speech" there is), the greater the number and variety of viewpoints available. Not only is this inherently more democratic, but the more viewpoints we have access to, the greater our understanding of an issue becomes.

I recall that this is a point made nearly 150 years ago by the English philosopher John Stuart Mill,<sup>27</sup> who asserted that "the only way in which a human being can make some approach to knowing the whole of a subject, is by hearing what can be said about it by persons of every variety of opinion, and studying all modes in which it can be looked at by every character of mind."<sup>28</sup>

The implication of this, of course, is that true understanding is as likely to come from the babble of voices rising from the crowd, as it is from the lone voice of the wise man. The implication of what Doctorow says, therefore, is that the more people who contribute to this babble, the deeper our comprehension of a topic is likely to be. Re-phrased, it could be Eric Raymond<sup>29</sup> saying, "given enough tongues, all misunderstandings are shallow."

Moreover, like Lessig, Doctorow believes that this same principle applies to creativity and innovation — which does not generally take place in a vacuum, but develops in direct proportion to the richness and variety of pre-existing ideas and creativity. As such, creativity is a process that Lessig likes to describe as "rip, mix and burn"; or as Doctorow prefers to put it, "mining the culture."

So while the Internet has undoubtedly become a conduit for a growing tide of empty-headed noise and scurrilous chatter, it is also a near frictionless channel for the free flow of creative ideas. As such, it holds out the promise of a blossoming of new ideas, new opinions and creative expression. The more oysters there are, the greater the number of pearls.

For Doctorow, as for Lessig, therefore, the danger is that if we allow censorship, over-restrictive copyright, and DRM-imposed access restrictions to obstruct the flow of creativity this enables, we risk impoverishing both human understanding and expression.

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<sup>27</sup> John Stuart Mill was an English philosopher and political economist, and an influential liberal thinker of the 19th century. [http://en.wikipedia.org/wiki/John\\_Stuart\\_Mill](http://en.wikipedia.org/wiki/John_Stuart_Mill).

<sup>28</sup> *On Liberty*, John Stuart Mill, Longman, Roberts & Green, 1869

<sup>29</sup> <http://poynder.blogspot.com/2006/03/interview-with-eric-raymond.html>.

The key point, perhaps, is not that information on the Internet *wants* to be free (as in free speech), but that it now *can be free*, and in ways not previously possible. Advocates of the free knowledge movement, therefore, are surely right to insist that those seeking to impose unnecessary restrictions on the Web must not prevail.

Indeed, to hobble the Internet is not just to pass up the opportunity of a huge new flowering of knowledge and creativity but — due to the collateral damage that over-regulation can cause — we risk plunging ourselves into a new dark age, where innovation, ingenuity and artistic expression dry up.

Suddenly Doctorow's phone bursts into noisy and garish life: a medley of flashing lights illuminates the screen, the phone vibrates on the desk and — in place of a regular ring tone — the voice of a disembodied Walt Disney character fills the room: "Oh, what a cute little pink bunny."

Doctorow hits the busy button. A few minutes later, however, the phone again bursts into intemperate life. It's his girlfriend trying to track him down, Doctorow tells me, adding, as if in explanation, "She's Welsh".

It's clearly time for me to go, so I say my farewells and depart.



### **A little check suit**

*RP: You were in born Toronto. How many generations have your family been in Canada?*

**CD:** My mother's parents were born in the Ukraine. They arrived in Toronto in the early 1950s. My father was born in a refugee camp in Azerbaijan: his mother was from Leningrad and his father was from White Russia. They were refugees in Azerbaijan.

*RP: Your parents are Jewish? Is that why your grandparents were in a refugee camp?*

**CD:** It was more of a Russian thing than a Jewish thing, although I suspect the Diaspora part was a Jewish story. Anyway, during the war my father's father — who was in White Russia — heard that the Germans were marching on Poland, and so with some of his brothers, his cousins, and their friends, they got on their bicycles to ride to Kiev.

Of course it was a crazy idea: it's like hearing that the Germans are headed for San Francisco and deciding to ride your bicycle to Boston! The upshot was that they got picked up by a Red Army patrol and ended up in Siberia. That's where my grandfather met my grandmother, and they went from there to Azerbaijan.

I presume my mother's family left Eastern Europe partly because of the pogroms<sup>30</sup> and anti-Semitism, but also because of the pioneering spirit that over the centuries has driven people to move to the New World.

*RP: In an interview you did with Strange Horizons in 2002 you said you were brought up by "sort of quasi-doctrinaire Trotskyist school teachers."<sup>31</sup> Is that right?*

**CD:** Sure, my folks were very political, and always have been. My father quit a job at Shell to become a professional revolutionary for a while, and he made a living selling communist tracts on the street.

*RP: He was a computer programmer?*

**CD:** Yes. He had been a PDP-11<sup>32</sup> programmer at Shell: he gave up coding to be a revolutionary.

*RP: He just decided to become a revolutionary one day?*

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<sup>30</sup> Pogrom (from the Russian: погром, which comes from the verb "громить" — to wreak havoc, to demolish violently) is a form of riot, a massive violent attack on a particular group; ethnic, religious or other, primarily characterised by destruction of their environment (homes, businesses, religious centres). The term has historically been used to denote massive acts of violence, either spontaneous or premeditated, against Jews, but has been applied to similar incidents against other, mostly minority, groups. The first pogrom of this sort is often considered to be the 1821 anti-Jewish riots in Odessa (modern Ukraine) after the death of the Greek Orthodox patriarch in Constantinople, in which 14 Jews were killed. The term became common after a large-scale wave of anti-Jewish riots swept southern Imperial Russia (modern Poland, Ukraine, Republic of Moldova) in 1881-1884, after Jews were wrongly blamed for the assassination of Tsar Alexander II. <http://en.wikipedia.org/wiki/Pogrom>.

<sup>31</sup> Interview with Katherine Macdonald, *Strange Horizons*, 31 March 2003. <http://www.strangehorizons.com/2003/20030331/doctorow.shtml>.

<sup>32</sup> Programmed Data Processor (abbreviated PDP) was the name of a series of computers, several of them ground-breaking and very influential, made by Digital Equipment Corporation. The PDP-11 was a 16-bit machine, widely regarded as the best 16-bit instruction set ever created. [http://en.wikipedia.org/wiki/Programmed\\_Data\\_Processor](http://en.wikipedia.org/wiki/Programmed_Data_Processor).

**CD:** Well, he came from a fairly religious household so — in the Talmudic tradition of arguing — one day when he was 18 and walked passed a union picket he picked a fight with them. He lost the argument but he went back for a re-match. Then, during a series of subsequent arguments, he was radicalised, and became a union and civil rights organiser. He and a friend also renounced Judaism together — they then spent the day wandering around waiting for the bolt of lightning to hit them!

*RP: And your mother?*

**CD:** My mother was a woman's movement organiser and a teacher. Both my parents also worked a lot on the Morgentaler campaign.

*RP: The Morgentaler campaign?*

**CD:** Morgentaler was an abortion doctor who set up clinics in disobedience of Canadian law. He was a big figure in Canadian political history,<sup>33</sup> and his campaigning eventually led to the legalisation of abortion in Canada. Actually, the first news photo I appeared in showed me being held aloft by Morgentaler at a benefit dinner in a Chinese restaurant. I was about four, and wearing a little check suit!

*RP: Your father also became a teacher: was this before or after being a revolutionary?*

**CD:** After. My father eventually decided that being a professional revolutionary was [laughs] not a fit trade. So he decided to go to teacher's college. My mom had always been a teacher, so she put him through college.

*RP: As a child you attended special schools didn't you?*

**CD:** They were alternative schools. The principle was the same as the British school Summerhill,<sup>34</sup> but they were publicly funded rather than private.

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<sup>33</sup> Henry Morgentaler, is a Canadian medical doctor and long time abortion activist from Montreal. He is a Holocaust survivor who, after living through Auschwitz, accepted a United Nations scholarship that was being offered to Jewish survivors. He moved to Canada in 1950 to work as a general practitioner. In 1969 he gave up his family practice and began openly performing illegal abortions. After being arrested several times, in 1983 he was arrested in Ontario for procuring illegal miscarriages. A jury acquitted him, but the Ontario Court of Appeal reversed the verdict. The case was then sent to the Supreme Court of Canada. He was acquitted once again, and the Canadian Supreme Court — in the 1988 case *Morgentaler et al. v. Her Majesty The Queen* — declared that the law he was convicted under was unconstitutional. This ruling essentially ended all statutory restrictions on abortion in Canada.

[http://en.wikipedia.org/wiki/Henry\\_Morgentaler](http://en.wikipedia.org/wiki/Henry_Morgentaler).

<sup>34</sup> AS Neill founded the controversial Summerhill School in 1921, in Hellerau, near Dresden. Today it is a private boarding and day school currently located in Leiston, Suffolk, England, serving primary and secondary education in a democratic fashion. Now run by Neill's daughter, Zoë Readhead, Summerhill is noted for its influential and groundbreaking philosophy that children learn best with freedom from coercion. All lessons are optional, and pupils are free to choose what to do with their time. In addition to taking control of their own time, pupils can participate in the self-governing community of the school.

*RP: So you had a very liberal education?*

**CD:** Very, very liberal. At the elementary school I went to you were allowed to set your own curriculum, provided that by the time you hit eighth grade you had covered all the subject matter.

*RP: How did that work in practice?*

**CD:** So, for example, in kindergarten you might say: "We want to make a rocket ship." You would then embark on an eight-year project to learn metallurgy, calculus, and so on; everything would be related to the project. The teachers would see to it that all the bases were covered, but it was very independent, and we did a lot of really great things. We had a half-day off every other week, for instance, where we were expected to take the tube into town and see stuff; and then come back and report on it.

It also had mixed classes: they changed the configuration each year, but there was always three or four different years in one room, and there was a strong expectation that older students would tutor younger students as part of their own education.

*RP: Less hierarchical than most schools then. But tell me, is bullying ever an issue in alternative schools?*

**CD:** Well, I was bullied; but that was because at different times our school was co-located with other schools, and at one point we were moved into the building of a much larger one — a very conservative school. There were a lot of kids there who were in the army cadets. That was problematic because we had a peace movement group in our school. Consequently, some much bigger kids used to beat me up all the time. They also used to throw glass bottles at my head as I went down the road.

*RP: Did you tell your parents?*

**CD:** I did, and they were incensed. But my father just couldn't believe what I was saying. So one day he came down and sat outside the gate in a car. I was handing out fliers about a peace demonstration and these two giant students came out and started kicking the shit out of me.

*RP: What did your father do?*

**CD:** He saw red. He got out of the car, picked the students up by the scruff of their necks — literally — and dragged them into the principal's office. There he threw them on the headmaster's bench, and said: "Do you know what's going on in your own grounds? I know what your duties are: we teach in the same school system, right. I'll have you up on charges if you don't stop it."

That was the moment that the principal of the larger school started paying attention.

*RP: That was your elementary school?*

**CD:** Yes. Then I went on to a couple of different alternative secondary schools. The second one was SEED, which is the oldest alternative school in Canada<sup>35</sup> — it was founded in 1968 by a bunch of students, including Marshall McLuhan's kid.<sup>36</sup> SEED stands for Self Education, Exploration and Discovery — very much in the spirit of the era!

*RP: How did that work?*

**CD:** Again it was publicly funded, and it was very self-directed. You could take courses for credit that were taught by teachers; or if you wanted to take courses for credit that none of the teachers knew how to teach, or were interested in teaching, you could go and find someone in the community who would teach you. The teacher would simply see to it that you met the curriculum guidelines.

You could also do stuff for which there was no curriculum and get what they call a SEED Program Credit — so long as the teacher overseeing your work believed that it had academic merit. I did a lot of cool things, including dropping out for a while and living in Mexico, where I sat writing in a little white house on top of a mountain.

*RP: Did you get a credit for that?*

**CD:** Yes.

*RP: When did you first become acquainted with computers?*

**CD:** In 1977 we had a teletype terminal<sup>37</sup> at home. It had no screen: just a daisy wheel printer connected to a keyboard. It also had an acoustic coupler<sup>38</sup> and it connected to the

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<sup>35</sup> <http://www.tdsb.on.ca/scripts/schoolasp.asp?schno=5596>.

<sup>36</sup> Herbert Marshall McLuhan was a Canadian educator, philosopher, and scholar, professor of English literature, literary critic, and communications theorist, who is one of the founders of the study of media ecology and is today an honorary guru among technophiles.  
[http://en.wikipedia.org/wiki/Marshall\\_McLuhan](http://en.wikipedia.org/wiki/Marshall_McLuhan).

<sup>37</sup> A teletype (teleprinter, teletypewriter, or TTY) is a now largely obsolete electro-mechanical typewriter which can be used to communicate typed messages from point to point through a simple electrical communications channel, often just a pair of wires. <http://en.wikipedia.org/wiki/Teletype>.

<sup>38</sup> Prior to the deregulation of telephony in many countries of the world, it was illegal to make an electrical connection to the telephone network. With the increased use of computing, acoustic couplers were used to connect modems to the telephone network. Usually, a standard telephone handset was placed into a cradle that had been engineered to fit closely (by the use of rubber seals) around the microphone and earpiece of the handset. A modem would modulate a loudspeaker in the cup attached to the handset's microphone, and the loudspeaker in the telephone handset's earpiece would be picked up by a microphone in the cup attached to the earpiece. In this way a two-way signal could be passed.  
[http://en.wikipedia.org/wiki/Acoustic\\_coupler](http://en.wikipedia.org/wiki/Acoustic_coupler).

VAX<sup>39</sup> at the University of Ontario's Institute for Studies in Education (OISE),<sup>40</sup> which is where my dad was doing his grad work. That was when I started using computers.

Later, when the Apple II Plus<sup>41</sup> came out in 1979, my dad was the head of computer science at a large high school. Apple went to all the heads of computer science and said: "Take this home for the summer, and if you want to order some in the autumn we'll organise it." Until then the school had been timesharing on a DEC,<sup>42</sup> and running punch cards. My dad took one look at the Apple, and said: "OK, personal computers are absolutely the future."

*RP: Did you learn to program?*

**CD:** Yes. I was nine when I wrote my first piece of production software. It was a quiz on nuclear disarmament that ran on an Apple II Plus. I had it running as an interactive kiosk at a big Toronto folk festival that a friend of my parents organised.

*RP: You went to four universities, but left without a degree?*

**CD:** Right. I started at York, in Toronto.<sup>43</sup> It had a humanities program that included a lot of multimedia design. The problem was that attending a very self-directed alternative school is not unlike going to a grad school, so it had spoiled me for undergraduate education — which is really about taking people who have never been on their own, and very gently giving them independence.

I had started living on my own when I was 17, and I had been educating myself my whole life, particularly the preceding four years at SEED, so it was not really for me.

*RP: But you tried again?*

**CD:** Yes. That summer I went to Clarion,<sup>44</sup> at Michigan State.<sup>45</sup> I did really well there, and thought about staying on in their creative writing program; but it was very expensive:

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<sup>39</sup> VAX is a 32-bit computing architecture that supports an orthogonal instruction set (machine language) and virtual addressing (i.e. demand paged virtual memory). It was developed in the mid-1970s by Digital Equipment Corporation (DEC). DEC was later purchased by Compaq, which in turn was purchased by Hewlett-Packard. <http://en.wikipedia.org/wiki/Vax>.

<sup>40</sup> <http://www.oise.utoronto.ca>.

<sup>41</sup> The Apple II — sometimes written as Apple ][ — was the first microcomputer manufactured by Apple Computer. Its direct ancestor was the Apple I, a circuit board computer for hobbyists that was never produced in quantity but which pioneered many of the features that made the Apple II a success. [http://en.wikipedia.org/wiki/Apple\\_II](http://en.wikipedia.org/wiki/Apple_II).

<sup>42</sup> Digital Equipment Corporation was a pioneering company in the American computer industry. It is often referred to within the computing industry as DEC. Its PDP and VAX products were arguably the most popular mini-computers for the scientific and engineering communities during the 70s and 80s. [http://en.wikipedia.org/wiki/Digital\\_Equipment\\_Corporation](http://en.wikipedia.org/wiki/Digital_Equipment_Corporation).

<sup>43</sup> <http://www.yorku.ca/web/index.htm>.

<sup>44</sup> The Clarion Science Fiction and Fantasy Writers' Workshop is the best known and most highly regarded science fiction and fantasy writing workshop in the country. Now in its thirty-ninth year, the Clarion Workshop has national and international visibility. There are now several Clarion workshops, in different

it would have cost \$20,000 or \$30,000 a year. So instead I went to the University of Toronto.<sup>46</sup> They had a new artificial intelligence program — basically they had married their CogSci<sup>47</sup> and CompSci<sup>48</sup> programs. But it was unspeakably bad.

*RP: In what way?*

**CD:** It was just really dreadful. One class, for instance, was taught in a room with 1,900 students, and the class was graded entirely on bubble and multiple-choice exams. This meant that you would read a text and then fill in the right bubbles on a machine-readable form. That was pretty much the whole class. I said to myself: "I can't believe I'm spending money to be here"!

After that I enrolled in an interdisciplinary studies program at the University of Waterloo.<sup>49</sup>

*RP: Again, you didn't graduate?*

**CD:** No. What happened was I wanted to write a thesis about the deviant sociology of the Internet; and I wanted to do it using HyperTalk<sup>50</sup> — which is a hypertext presentation environment. This was around 1994 when the whole message was that the Internet was going to reinforce our social norms. But I had been a BBSer<sup>51</sup> for a decade, and I could see that it was actually going to make us a lot weirder. So I grabbed all these documents from gopher<sup>52</sup> sites and BBSes, and from Usenet,<sup>53</sup> in order to exemplify my point. The

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world locations, including Michigan State University, Clarion South (located in Australia); and Clarion West (in Seattle, Washington).

<sup>45</sup> <http://www.msu.edu>.

<sup>46</sup> <http://www.utoronto.ca>

<sup>47</sup> Cognitive science is usually defined as the scientific study either of mind or of intelligence.

<http://en.wikipedia.org/wiki/Cogsci>.

<sup>48</sup> Computer science is the study of the theoretical foundations of information and computation and their implementation and application in computer systems. <http://en.wikipedia.org/wiki/Compsci>.

<sup>49</sup> <http://www.uwaterloo.ca>.

<sup>50</sup> HyperTalk is a high-level programming language created in 1987 by Dan Winkler and used in conjunction with Apple Computer's HyperCard hypermedia program, written by Bill Atkinson.

<http://en.wikipedia.org/wiki/HyperTalk>.

<sup>51</sup> A bulletin board system, or BBS, is a computer system running software that allows users to dial into the system over a phone line and, using a terminal program, perform functions such as downloading software and data, uploading data, playing games, reading news, and exchanging messages with other users. During their heyday (from the late 1970s to the mid 1990s), many BBSes were run as a hobby free of charge by the "SysOp" (system operator), while other BBSes charged their users a subscription fee for access. Bulletin board systems were in many ways a precursor to the modern form of the World Wide Web and other aspects of the Internet. <http://en.wikipedia.org/wiki/Bbs>.

<sup>52</sup> Released in 1991, Gopher is a distributed document search and retrieval network protocol designed for the Internet. Gopher's original design goal for sharing documents was similar in scope to the World Wide Web, and as such has been almost completely displaced by it.

[http://en.wikipedia.org/wiki/Gopher\\_protocol](http://en.wikipedia.org/wiki/Gopher_protocol).

<sup>53</sup> Usenet is a distributed Internet discussion system conceived by Duke University graduate students Tom Truscott and Jim Ellis in 1979. Users, sometimes called Usenetters, read and post email-like messages (called "articles") to a number of distributed newsgroups, categories that resemble bulletin board systems in

plan was to put them on CD-ROM alongside my analysis, and to write it in the gonzo style<sup>54</sup> of the Internet deviant.

*RP: But you didn't finish it?*

**CD:** Well, when I gave it to Waterloo — which is the MIT of the North and has a reputation for being forward looking — they said: "It's really interesting, but it's going to have to be on 8 and a half by 11 paper, and double-space typed; and we want American ALA stylebook."

*RP: You weren't prepared to do that?*

**CD:** I got a job offer to program CD-ROMs for a company called Voyager, which was based in New York and at the time the leading CD-ROM entertainment company in the world. They had just done William Gibson's *Neuromancer*<sup>55</sup> interactive for instance.

So I thought: "OK. I can stay here and pay you guys not to do a CD-ROM, or I can go and make CD-ROMs with Voyager, and get paid 20 times what I make in the local science fiction bookstore." So I dropped out of university, and took the job programming CD-ROMs.

## Entrepreneur

*RP: How did it work out at Voyager?*

**CD:** Not long after I joined the company the CD-ROM market imploded! So I borrowed a PowerBook<sup>56</sup> from my mom and I took that around with an external modem to a bunch of ad agencies. I showed them gopher, and I said: "You need me to write gopher sites for your clients."

*RP: With much success?*

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most respects. The medium is sustained among a large number of servers, which store and forward messages to one another. <http://en.wikipedia.org/wiki/Usenet>.

<sup>54</sup> Gonzo is a style of reportage, film making, or any form of multimedia production in which the reporter, filmmaker or creator is intrinsically enmeshed with the subject action (rather than being a passive observer). <http://en.wikipedia.org/wiki/Gonzo>.

<sup>55</sup> *Neuromancer* by William Ford Gibson, is the most famous early cyberpunk novel and won the Nebula Award, the Philip K. Dick Memorial Award, and the Hugo Award after being published in 1984. It was Gibson's first novel and the start of the *The Sprawl* trilogy. The novel examines the concepts of artificial intelligence, virtual reality, genetic engineering, multinational corporations overpowering the traditional nation-state and cyberspace (a computer network called the matrix) long before these ideas were fashionable in popular culture. <http://en.wikipedia.org/wiki/Neuromancer>.

<sup>56</sup> The PowerBook is a laptop computer line manufactured by Apple Computer; a portable version of the Macintosh aimed at the professional market. <http://en.wikipedia.org/wiki/Powerbook>.

**CD:** I got someone interested eventually, but one day half way through the project I came in with a floppy disk, and said: "You have got to see this; it's called Mosaic.<sup>57</sup> It's still in beta, but there's like 80 web sites already, and there will be hundreds of these some day. Let's scrap what we're doing and I'll recycle some of the code so we can have more effect. Won't that be cool?" So I ended up doing web sites instead.

**RP:** *What age were you by now?*

**CD:** Around 24. Eventually I was lured to California, to work for a company that did SGI<sup>58</sup> printer integration, and I started working on really big iron, doing half a million dollar installations of big UNIX<sup>59</sup> gear. That was really fun.

**RP:** *In 1999 you co-founded a company called OpenCola.<sup>60</sup> How did that come about?*

**CD:** I worked for a while as the chief information officer at a documentary film house, doing web services. Then I went to work for a local ad agency, which turned more into a tech services companies. While I was there my neighbour joined us as chief technology officer, and subsequently he and I left to found OpenCola.

**RP:** *What sort of company was OpenCola?*

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<sup>57</sup> Mosaic is a web browser (client) for the World Wide Web written at the National Center for Supercomputing Applications (NCSA). Its development began in 1992 and officially ceased on January 7<sup>th</sup> 1997. Mosaic was described as "the killer application of the 1990s" because it was the first program to provide a slick multimedia graphical user interface to the Internet's burgeoning wealth of distributed information services (formerly mostly limited to FTP, Usenet and Gopher) at a time when access to the Internet was expanding rapidly outside its previous domain of academia and large industrial research institutions. [http://en.wikipedia.org/wiki/Mosaic\\_browser](http://en.wikipedia.org/wiki/Mosaic_browser).

<sup>58</sup> Silicon Graphics, Inc., commonly called SGI, began as a maker of graphics display terminals in 1982; it was founded by Jim Clark and Abbey Silverstone. The initial products were based on Jim Clark's work with geometry pipelines, specialised software or hardware that accelerates the display of three-dimensional images. SGI was originally incorporated as a California corporation in November 1981, and reincorporated as a Delaware corporation in January 1990. <http://en.wikipedia.org/wiki/Sgi>.

<sup>59</sup> UNIX is a computer operating system originally developed in the 1960s and 1970s by a group of AT&T Bell Labs employees including Ken Thompson, Dennis Ritchie, and Douglas McIlroy. Today's UNIX systems are split into various branches, developed over time by AT&T, several other commercial vendors, as well as several non-profit organisations, such as individuals who write code under the [GNU General Public License](http://en.wikipedia.org/wiki/GNU_General_Public_License) (GPL). <http://en.wikipedia.org/wiki/Unix>.

<sup>60</sup> The company OpenCola was founded by Grad Conn, Cory Doctorow and John Henson, and at one point employed 50 people. OpenCola was also a desktop application by that same company, which enabled users to search, acquire, manage and share information from multiple data sources, including the Internet, peers on the OpenCola network, and existing proprietary databases, from a single interface. The core component of OpenCola was a free, downloadable application that, like Napster, resided on a user's hard drive and linked to other OpenCola users' hard drives. It then kept track of users' web searches and selections, anonymously sharing that information with other OpenCola users who make similar searches. OpenCola also extended search engine capabilities with the ability to perform contextual searching — a process that searches an entire document's contextual subject matter for relevance and tries to replenish previous searches with more relevant results.

**CD:** It was based on some stuff that we had been noodling with in our spare time. The idea was to create an open source peer-to-peer<sup>61</sup> software application to help people find stuff.

*RP: A kind of search engine?*

**CD:** More a collaborative filter and suggestion tool. There were already lots of people developing great tools for finding stuff, if you knew what to look for; but no one was doing anything great to help you figure out what you are looking for if you had never heard of it. OpenCola was intended to help with that.

*RP: How did it work?*

**CD:** Most news services tell you about stuff you are already familiar with — essentially they give you more detail. Sports news, for instance, tells you about things you already know, as opposed to, say, providing webcasts of transgenderisation surgery — which is likely something you never even suspected existed. So what we did was tell people about stuff that they had never heard of before; and unlike most traditional news and entertainment services, we had a lot of good sources.

*RP: What was your role at the company?*

**CD:** My title was chief evangelist, but I was the founder. Anyway, we raised some money from local investors, and we went on a road show with our prototypes to raise more money. All told we raised about \$14 million, and we had some code we wanted to shift for the first O'Reilly P2P conference. Then Napster was sued,<sup>62</sup> and our investors freaked out.

*RP: Why?*

**CD:** Because the Napster suit had named the investors, along with the investors' limited partners. In fact, the tactic wasn't aimed at Napster: it was deliberately aimed at

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<sup>61</sup> A peer-to-peer (or P2P) computer network is a network that relies on the computing power and bandwidth of the participants in the network rather than concentrating it in a relatively low number of servers. P2P networks are typically used for connecting nodes via largely ad hoc connections. A pure peer-to-peer network does not have the notion of clients or servers, but only equal peer nodes that simultaneously function as both "clients" and "servers" to the other nodes on the network. This model of network arrangement differs from the client-server model where communication is usually to and from a central server. <http://en.wikipedia.org/wiki/P2p>.

<sup>62</sup> Napster is an online music service which was originally a file sharing service created by Shawn Fanning. Napster was the first widely used peer-to-peer music sharing service, and it made a major impact on how people, especially university students, used the Internet. Its technology allowed music fans to easily share MP3 format song files with each other, leading to the music industry's accusations of massive copyright violations. In December 1999, therefore, The Recording Industry Association of America ([RIAA](http://en.wikipedia.org/wiki/RIAA)) filed suit against Napster for copyright infringement. The case led to the closure of the file-swapping service, with Napster agreeing to pay music creators and copyright owners a \$26 million settlement for past, unauthorised uses of music, as well as an advance against future licensing royalties of \$10 million. <http://en.wikipedia.org/wiki/Napster>.

companies like ours — all the companies that might make P2P software after Napster. That was the clear and unambiguous intention of naming the limited partners, and these companies all lost their funding immediately.

As it happens, I don't think that tactic survived the court challenge, so it was ridiculous. Think about it: what is the liability of a union pension fund that invested in a venture capitalist that invested in a company that enabled someone else's infringement. What you are talking about is a company that is not an infringer but which enabled some infringer. So the company is secondarily liable, the investors are tertiary liable, and then the investors' investors — I don't even know how you say fourth grade liability...

*RP: But it succeeded in its aim of frightening off investors?*

**CD:** Exactly. It was clearly intended to chill investment, and it did. And when they write the history of P2P this is one of the main points they will need to note. Anyway, that was the beginning of the end for OpenCola: the company started to fall apart and we went through all kinds of trials and tribulations.

*RP: How did it end?*

**CD:** At one point we pitched Microsoft at their ISV<sup>63</sup> seminar, and they were damned close to a buy-out offer. As a result our investors immediately got dollar signs in their eyes and forced out the CEO. Essentially, they started to take over the company and to cram the founders' shares down so they could take bigger pieces for themselves. Eventually they sold the company to Open Text.<sup>64</sup>

*RP: Did you get a wad of dollars from the sale?*

**CD:** Not a sausage. It all went to the investors.

*RP: Did they make a good sale?*

**CD:** As far as I know. But by then I had been forced out so far that I don't know the details of the sale. I left to work for the Electronic Frontier Foundation.<sup>65</sup>

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<sup>63</sup> Independent software vendor.

<sup>64</sup> <http://www.opentext.com>.

<sup>65</sup> The Electronic Frontier Foundation (EFF) is a non-profit advocacy and legal organisation based in the United States with the stated purpose of being dedicated to preserving free speech rights such as those protected by the First Amendment to the United States Constitution in the context of today's digital age. Its stated main goal is to educate the press, policymakers and the general public about civil liberties issues related to technology; and to act as a defender of those liberties. [www.eff.org](http://www.eff.org).

## Cyber Activist

*RP: Why EFF?*

**CD:** By then I had moved to California to open OpenCola's San Francisco offices. When we saw the liability we faced as a result of the Napster case we went to talk to EFF. They became a great advisor to OpenCola, and in the process I developed a really good working relationship with them.

Also, around that time, EFF got evicted, and since we had a bunch of space we couldn't use in our San Francisco offices they moved in with us for a while. So I got very chummy with them. I felt they were the Bee's Knees, and they liked me.

*RP: This is around 2001?*

**CD:** Yea. So when things started to fall apart at OpenCola I began planning to return to Toronto. Before leaving, however, I thought I'd just ask if I could work for EFF. They said: "Great idea, but we can't afford you; we don't have any money."

*RP: So at that pointed you moved back to Canada?*

**CD:** Actually, no. When I was literally at San Francisco airport on my way back to Toronto, I got a call out of the blue from EFF's Shari Steele.<sup>66</sup> She said: "We just got an anonymous donation of a quarter of a million dollars. We can hire you for EFF." So I took the job and stayed in San Francisco.

*RP: What were you hired to do at EFF?<sup>67</sup>*

**CD:** I am not a lawyer. I don't have any kind of legal training. What I am reasonably good at, however, is explaining stuff to civilians. I am persuasive, and I have a relatively high — although fast dwindling — tolerance for sitting through incredibly evil smoke-filled meetings, where representatives of large wicked corporations divide up the world.

So I started going to these meetings; and I started telling people what they are doing. I also recruited people to fight what they are doing, and I wrote about the issues. I would, say, go to the UN, and then write up papers for lawmakers and regulators explaining what they are doing. That more or less is what EFF hired me to do.

*RP: So you became a cyber activist. But tell me: what is the purpose of EFF?*

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<sup>66</sup> Prior to becoming EFF's Executive Director in 2000, Shari Steele served as EFF's Legal Director for eight years. <http://www2.cddc.vt.edu/www.eff.org/homes/steele.html>.

<sup>67</sup> This interview took place while Doctorow was a full-time employee at EFF. He left in January 2006, but remains a Fellow of EFF.

**CD:** EFF's mission is to defend personal liberty in the era of technology. Essentially, it's in the business of ensuring that as we interpret our traditional liberties for the technological era we interpret them as liberally as possible, not as narrowly as possible.

*RP: What does that mean in practice?*

**CD:** It means, for instance, that when EFF is asked the question: "Is e-mail covered by a search warrant or a wiretap warrant?" it answers "Wiretap".

*RP: Which was the question that led to the founding of EFF?*

**CD:** That's right. EFF was formed when the cops seized the computers at Steve Jackson Games<sup>68</sup> and read the e-mail on them. EFF's founders said: "Wait a moment; a cop wants to go to Steve Jackson Games with a warrant to look at their equipment, and he thinks that warrant also allows him to read the private e-mail stored on their BBS server, and introduce that email into evidence. That's not good."

*RP: And EFF successfully challenged that presumption.*

**CD:** Right. Because if we say that email is equipment rather than communications (which are subject to a separate level of scrutiny, and require a wire tap warrant) then what does the future look like? EFF's response was to say: "Look, this e-mail cannot be introduced into evidence because it wasn't in the warrant. If you are going to read e-mail you need a wiretap warrant. You need to satisfy the higher burden of a wiretap order."

*RP: So EFF's job is to ensure that existing laws are interpreted in the new environment in ways that do not erode traditional rights?*

**CD:** Exactly. Similarly, when EFF is asked the question: "Is code like speech (and so protected under free speech rules), or like a machine (and so not protected under free speech rules)?" EFF says: "It is like speech, or at least it is more like speech than a machine". That, by the way, is how EFF legalised crypto. You know the history of the Bernstein case?

*RP: Tell me about it?*

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<sup>68</sup> On the morning of March 1<sup>st</sup> 1990, without warning, a force of armed Secret Service agents — accompanied by Austin police and at least one civilian "expert" from the phone company — occupied the offices of Steve Jackson Games and began to search for computer equipment. The home of Loyd Blankenship, the writer of GURPS Cyberpunk, was also raided. A large amount of equipment was seized, including four computers, two laser printers, some loose hard disks and a great deal of assorted hardware. One of the computers was the one running the Illuminati BBS. More than three years later, a federal court awarded damages and attorneys' fees to the game company, ruling that the raid had been careless, illegal, and completely unjustified. Electronic civil-liberties advocates hailed the case as a landmark. It was the first step toward establishing that online speech *is* speech, and entitled to Constitutional protection... and, specifically, that law-enforcement agents can't seize and hold a BBS with impunity.  
<http://www.eff.org/legal/cases/SJG>.

**CD:** The National Security Agency<sup>69</sup> had judged that crypto was munitions and so limitations should be placed on its export and its sale. Essentially, NSA wanted to keep access to crypto away from the mob, child pornographers, terrorists and pirates — what we call the Four Horsemen of the Apocalypse. The problem was that in doing so it was keeping it away from everyone. In short, the people at NSA believed they should be the only people able to use crypto.

*RP: What was EFF's objection?*

**CD:** EFF said there are a number of problems with that position. First, the bad guys can easily avail themselves of mathematicians able to create strong crypto. Second, if civilians cannot use good crypto then these pirates and terrorists will be able to break into private messages and read them.

In other words, by trying to make sure that criminals couldn't have messages that the government couldn't read, NSA was creating a situation in which honest people couldn't send messages that other people can't read.

*RP: How did EFF get crypto legalised then?*

**CD:** First we tried to convince NSA on economic grounds. We pointed out, for instance, that European countries won't necessarily follow suit, which would mean that when we competed with Europe they would have an advantage over us, and their banks would operate better because they wouldn't be subject to technological break-ins and so on. But no one cared.

Next we tried the technological argument, pointing out that even though NSA recruited a large proportion of the PhD mathematicians graduating from America's universities every year, their crypto wasn't even secure; and other people could produce stronger encryption.

*RP: That didn't work either?*

**CD:** No. They said they had a hollow mountain full of mathematicians and their cipher was a very good cipher and it would protect information for a trillion years. So we said: "Actually, it won't. We have a mathematician who says otherwise." That was EFF's John Gilmore.<sup>70</sup>

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<sup>69</sup> The National Security Agency / Central Security Service (NSA/CSS) is a United States government agency responsible for both the collection and analysis of message communications, and for the security of government communications against similar agencies elsewhere. It is a part of the Department of Defense. Its eavesdropping brief includes radio broadcasting, both from organisations and individuals, the Internet, and other intercepted forms of communication, especially confidential communications.  
[http://en.wikipedia.org/wiki/National\\_Security\\_Agency](http://en.wikipedia.org/wiki/National_Security_Agency).

<sup>70</sup> [John Gilmore](http://en.wikipedia.org/wiki/John_Gilmore) is a co-founder of the Electronic Frontier Foundation, of the [Cypherpunks](#) mailing list, and of [Cygnus Solutions](#). He also created the alt.\* hierarchy in Usenet.  
[http://en.wikipedia.org/wiki/John\\_Gilmore\\_%28advocate%29](http://en.wikipedia.org/wiki/John_Gilmore_%28advocate%29).

They responded: "We've got a hollow mountain full of mathematicians: you've got a hippy. What can your hippy possibly know?"

So John designed a chip to break NSA's cipher. He also designed an operating system for it, and a CPU, and he built the computer. Then he showed that brute force could break the NSA cipher in two hours.<sup>71</sup>

*RP: Did that convince them?*

**CD:** No, so eventually we took the matter to court. Cindy Cohn,<sup>72</sup> who is now our legal director, litigated on behalf of a guy called Dan Bernstein.<sup>73</sup> Dan is an Ivy League mathematician who wanted to publish a book in which he had included code to generate ciphers that were stronger than those the NSA wished to have in civilian hands. The NSA didn't like that.

*RP: They were still determined to keep knowledge of crypto out of the public domain?*

**CD:** Exactly. So Cindy went to court and said: "Look the First Amendment<sup>74</sup> says you can't restrain freedom of speech, and that has been widely interpreted by the Supreme Court to mean that you cannot restrict publication, including the right to publish scientific papers. Here we have some science being published; are you going to tell us that just because you can type it into a computer this code isn't expressive speech, and isn't covered by the First Amendment?" The Ninth Circuit Court of Appeals ruled in Cindy's favour<sup>75</sup>; and that's why crypto is legal today.

*RP: Since then EFF has been involved in many other cases involving civil liberties, including those of Edward Felten<sup>76</sup>, Jon Johansen<sup>77</sup> and Dmitry Sklyarov.<sup>78</sup> But how does EFF's mission differ from that of the ACLU?<sup>79</sup>*

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<sup>71</sup> EFF started work on the DES Cracker (Data Encryption Standard Cracker) in 1997. It announced that it had broken DES in July 1998. In reality it took "less than three days", rather than two hours, to do so. Paul Kocher of [Cryptography Research](#) led the architecture and software team, which also included EFF's John Gilmore. EFF subsequently published a book about the project, called [Cracking DES](#).

[http://www.eff.org/Privacy/Crypto/Crypto\\_mise/DESCracker/HTML/19980716\\_eff\\_des\\_faq.html](http://www.eff.org/Privacy/Crypto/Crypto_mise/DESCracker/HTML/19980716_eff_des_faq.html).

<sup>72</sup> [http://www.eff.org/about/staff/?f=cindy\\_cohn.html](http://www.eff.org/about/staff/?f=cindy_cohn.html).

<sup>73</sup> Daniel Bernstein is a professor at the University of Illinois at Chicago, a mathematician, a cryptologist, and a programmer. Bernstein brought the court case *Bernstein v. United States*. Bernstein was represented by the EFF, who hired outside lawyer Cindy Cohn who, as Doctorow says, went on to become EFF's legal director.

<sup>74</sup> The First Amendment to the United States Constitution is a part of the United States Bill of Rights. It prevents the US Congress from infringing on six rights, including the right to freedom of speech.

[http://en.wikipedia.org/wiki/First\\_Amendment\\_to\\_the\\_United\\_States\\_Constitution](http://en.wikipedia.org/wiki/First_Amendment_to_the_United_States_Constitution).

<sup>75</sup> The Bernstein case was first brought in 1995, when Bernstein was a student at Berkeley and wanted to publish a paper and associated source code on his [Snuffle](#) encryption system. Four years and one regulatory change later, the court case won a landmark decision from the Ninth Circuit that software was speech protected by the First Amendment, and that the government's regulations preventing its publication were unconstitutional. As a result, national restrictions on encryption software were overturned.

[http://en.wikipedia.org/wiki/Bernstein\\_v.\\_United\\_States](http://en.wikipedia.org/wiki/Bernstein_v._United_States).

<sup>76</sup> Edward Felten is a professor of computer science and public affairs at Princeton University. Felten and his colleagues wrote a scientific paper explaining the methods they used to defeat a watermark system

**CD:** EFF is strictly an impact litigator, which means that it only defends people where it can make a precedent, or a law. It just can't afford to be everyone's legal defence outfit.

*RP: When I looked at the EFF's web site I thought it seemed very US centric?*

**CD:** Well it is. The reason I came to Europe was not to cover European issues, but to work on those issues that had a high probability of boomeranging back on America. There is a need for separate European activist groups, and indeed there are some very effective European activist groups. The task of those groups should be to pursue European issues that are European *qua* European.<sup>80</sup>

## **Pouring old wine into new bottles**

*RP: What specific issues do you personally take an interest in terms of your activism?*

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developed by the Secure Digital Music Initiative ([SDMI](#)). Planning to present the paper at the Fourth International Information Hiding Workshop of 2001 in Pittsburgh, Felten alleged he was threatened with legal action by SDMI, the Recording Industry Association of America, and [Verance Corporation](#), under the terms of the DMCA, on the argument that one of the technologies his team had broken were currently in use in the market. Felten withdrew the presentation from the workshop, reading a brief statement about the threats instead. SDMI and other copyright holders denied that they had ever threatened to sue Felten. With help from the EFF, Felten sued the groups, requesting a declaratory judgement ruling that their publication of the paper would be legal. The case was dismissed by the judge for a lack of standing.

[http://en.wikipedia.org/wiki/Edward\\_felten](http://en.wikipedia.org/wiki/Edward_felten).

<sup>77</sup> Jon Johansen, also known as DVD Jon, is a Norwegian who was involved in the release of the [DeCSS](#) software. DeCSS is a computer program capable of decrypting content on a DVD video disc encrypted using the Content-Scrambling System (CSS). DeCSS was devised by persons unknown and released anonymously on the Internet mailing list LiViD in October 1999. Johansen was alleged to be one of the authors. As a result, Norwegian police raided his home in 2000. In 2002 Johansen was put on trial in Norway but was found not guilty of any illegal behaviour. His defence was assisted by the Electronic Frontier Foundation. A second trial in 2003 resulted in him being acquitted a second time.

[http://en.wikipedia.org/wiki/Jon\\_Johansen](http://en.wikipedia.org/wiki/Jon_Johansen).

<sup>78</sup> Dmitry Sklyarov is a Russian computer programmer. Sklyarov was a PhD student researching cryptanalysis and an employee of the Russian software company [ElcomSoft](#), where he created The Advanced eBook Processor software, also known as AEBPR. On July 16<sup>th</sup> 2001, after giving a presentation called "eBook's Security — Theory and Practice" at the [DEF CON](#) convention in Las Vegas, he was arrested by the FBI as he was about to return to Moscow and charged with distributing a product designed to circumvent copyright protection measures, under the terms of the Digital Millennium Copyright Act. Following widespread protest and the support of the EFF, on August 6<sup>th</sup> 2001, Sklyarov was released on a \$50,000 bail but was not allowed to leave Northern California. The charges against Sklyarov were later dropped in exchange for his testimony. He was allowed to return to Russia on December 13<sup>th</sup> 2001.

[http://en.wikipedia.org/wiki/Dmitry\\_Sklyarov](http://en.wikipedia.org/wiki/Dmitry_Sklyarov).

<sup>79</sup> The American Civil Liberties Union, <http://www.aclu.org>.

<sup>80</sup> In September 2005 Doctorow helped found the London-based Open Rights Group. (<http://news.bbc.co.uk/1/hi/technology/4225938.stm>), and is a member of the ORG Advisory Panel. <http://www.openrightsgroup.org>.

**CD:** My lookout for the most part covers copyright, trademarks, patents, and related rights. I also have a little bit of a practice in spectrum allocation, but I been moving away from that, and focusing exclusively on digital rights management<sup>81</sup> — which is now my main area of speciality.

*RP: What is the issue with DRM from your perspective?*

**CD:** There are a lot of different issues. For me, however, the main issue is that DRM is a means by which someone who has been granted a limited government monopoly over who gets to copy his works can bootstrap that into an unlimited monopoly.

*RP: When you say government monopoly I assume you mean copyright. And I guess your point is that DRM allows rights holders to assert greater control over how their content is used than traditional copyright allows?*

**CD:** Yes. It also stops innovators from developing news ways of using that content.

*RP: In what way?*

**CD:** Historically, copyright always adapted to new technology. It was like putting old wine into a new bottle. So, for instance, when the phonograph was developed it offered a new means of recording a performance, allowing you to replace the old means of publishing instructions for a performance, which was sheet music. So you poured the old written frozen performances into the new bottle, and copyright law came along and said: "Ok, that's good. We will adapt the law to make that possible."

Later, people took those phonographs and poured the wine that's in them into a new bottle called radio. Again, copyright law came along again and said: "Hey, that's not bad either. We'll adapt the law for that too."

It was the same with movies: when the VCR came along people took the old movies and poured them into the VCR bottle. Once again copyright came along and said: "Cool. We'll find a way to make that legal too."

*RP: You're saying that DRM prevents that kind of innovation because it stops people from pouring the wine into new bottles?*

**CD:** Exactly. Moreover, even if you do find a way to pour old wine into a new bottle it is now *per se* illegal to do so — because the Digital Millennium Copyright Act (DMCA<sup>82</sup>) has made figuring out how to pour old wine into new bottles itself illegal.

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<sup>81</sup> Digital rights management (DRM) is the umbrella term referring to any of several technologies used to enforce pre-defined policies controlling access to software, music, movies, or other digital data. DRM critics argue that the phrase "digital rights management" is a misnomer and the term "digital restrictions management" is a more accurate characterisation of the functionality of DRM systems.

[http://en.wikipedia.org/wiki/Digital\\_rights\\_management](http://en.wikipedia.org/wiki/Digital_rights_management).

<sup>82</sup> Signed into law by President Bill Clinton on October 28<sup>th</sup> 1998, the Digital Millennium Copyright Act (DMCA) was passed in order to implement the 1996 World Intellectual Property Organisation (WIPO)

*RP: Let's clarify this. What we are saying is that DRM consists of technical methods for controlling or restricting the way digital content can be used on existing electronic devices, or transferred to new electronic devices. And it does this by incorporating encryption and software-controlled "padlocks" that limit usage and copying. Using your metaphor, it prevents people from pouring old wine into new bottles. Moreover, if someone figures out how to circumvent these technical measures they are now breaking the law, because the DMCA made it illegal to circumvent DRM?*

**CD:** Yes. So DRM is really problematic. And the reason that we have to have anti-circumvention rules for DRM is because DRM is grounded on junk science.

*RP: Why do you call it junk science?*

**CD:** Because it is predicated on the idea that I can give you a device and in that device is a secret key; and I can somehow keep you from extracting the key from that device after I give it to you. Yet in every instance where attempts have been made to stop people from extracting keys, it has ended in failure. Every work ever restricted with DRM is currently available for download on the Internet.

*RP: Because any DRM system can be circumvented?*

**CD:** Indeed. So DRM is a total failure; it is junk science. However, the goal it actually serves, and serves quite well, is not that of protecting companies who deploy it from illegal copying, but of protecting them from competition.

*RP: By stifling innovation?*

**CD:** Right. By protecting these companies from anyone inventing a new way of pouring old wine into a new bottle it hinders innovation.

*RP: As you said, the invention of the Video Cassette Recorder was a classic example of how new technology can enable old wine to be poured into new bottles. And I guess the VCR was one of the most significant technology developments to impact media companies prior to the Internet. In the case of the VCR, however, the movie companies failed in their attempt to stop old wine being poured into these new bottles<sup>83</sup>?*

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[Copyright Treaty](#). The Bill included controversial anti-circumvention prohibitions that criminalise production and dissemination of technology that can circumvent measures taken to protect copyright (i.e. DRM), not merely infringement of copyright itself. It also heightens the penalties for copyright infringement on the Internet. <http://en.wikipedia.org/wiki/DMCA>.

<sup>83</sup> *Sony Corp. of America v Universal City Studios, Inc.* (1984), also known as the "Betamax case", ruled that the making of individual copies of complete television shows for purposes of time-shifting does not constitute copyright infringement, but is fair use. The Court also ruled that the manufacturers of home video recording devices, such as Betamax or other video cassette recorders (VCRs), cannot be liable for infringement. [http://en.wikipedia.org/wiki/Sony\\_Corp.\\_of\\_America\\_v.\\_Universal\\_City\\_Studios%2C\\_Inc](http://en.wikipedia.org/wiki/Sony_Corp._of_America_v._Universal_City_Studios%2C_Inc).

**CD:** They did. And it's worth noting that when Hollywood found itself having to respond to competition it was forced to reinvent what it sold, and how it sold it; it had to invent a new business model to accommodate the VCR. That was good, because if the VCR had not forced Hollywood to think up new ways of offering their movies we wouldn't have video stores today, and we wouldn't have DVDs.

*RP: And that kind of public good cannot occur if innovation is restricted?*

**CD:** No. Because if you came up with a technology as radical as the VCR today, or if you came up with a technology that lets you skip commercials automatically like ReplayTV<sup>84</sup> did; or if you came up with a technology that lets you move your iTunes<sup>85</sup> to another device; or if you came up with a technology that lets you move your movies to your mobile phone; and you did any of these things without permission from the movie studios, you would be doing something that was *per se* illegal, because these media files have DRM on them.

*RP: This is all bad is it?*

**CD:** It's a really dangerous place to be: the social fall-out from DRM is the criminalisation of math, of ingenuity, and of speech; and it also imposes a restriction on innovation in the market place. I'm not sure how to say this concisely, but it also takes away the consumer's investment in his own media.

*RP: Can you give me an example?*

**CD:** Let's say that you bought \$1,000 worth of CDs ten years ago. Since there is no DRM on CDs they can be freely innovated with. That means that in the intervening decade you would have gotten a dividend on your investment — in the form of all the things you can do with a CD today.

So, for instance, you can make karaoke from them, or mashups;<sup>86</sup> you can make ring tones, or MP3s;<sup>87</sup> you can load them on to your iPod,<sup>88</sup> or your Creative Labs device;<sup>89</sup>

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<sup>84</sup> In October 2001 major TV networks ABC, CBS, NBC and their parent companies filed a copyright suit against Sonicblue's ReplayTV, alleging that its new digital video recorder violates copyright laws. The companies claimed Sonicblue's ReplayTV 4000 recorder allows viewers to make digital copies of shows "for the purpose of — at the touch of a button — viewing the programming with all commercial advertising automatically deleted. In June 2003 ReplayTV agreed to drop the controversial functions in its new models. [http://groups.google.com/group/alt.video.ptv.replaytv/browse\\_thread/thread/b33e18dbfc99b13b/988e3d2cbcaac676%23988e3d2cbcaac676?sa=X&oi=groups&start=0&num=3](http://groups.google.com/group/alt.video.ptv.replaytv/browse_thread/thread/b33e18dbfc99b13b/988e3d2cbcaac676%23988e3d2cbcaac676?sa=X&oi=groups&start=0&num=3)

<sup>85</sup> iTunes is a digital media player application, developed by Apple Computer, for playing and organising digital music and video files. The program is also the interface to manage the music on Apple's popular iPod digital audio player. iTunes can also connect to the iTunes Music Store which allows users to purchase digital music and movie files that can be played by iPods and iTunes. <http://en.wikipedia.org/wiki/iTunes>.

<sup>86</sup> Mashup, or bastard pop, is a musical genre that, in its purest form, consists of the combination (usually by digital means) of the music from one song with the acapella from another. Typically, the music and vocals belong to completely different genres. The term is now used more generally, and can for instance

you can put them on an MP3 CD that holds ten times as much music as the CD that they came from; and you can make copies for your car in case your car is broken into.

If, by contrast, you had bought \$1,000 worth of DVDs ten years ago all you can do with them ten years later is watch them, because they are protected with DRM; so all the value that would have accrued to you in the intervening decade has been stolen from you by the people who sold you the disc. In short, there is a lot wrong with DRM.

Another problem, by the way, is that modern DRMs are architected so that it is impossible to know when you buy a product whether or not the DRM it comes with has terms you like or dislike — because the terms can be changed after you buy it.

*RP: This is because DRM is software controlled, and new rules can be applied remotely after you have bought the product?*

**CD:** Exactly. So if you bought iTunes music with an iTunes version 4.0 you bought music that you could stream from any computer to any other computer in the world. A month later that iTunes music lost that feature and was replaced with a new feature — which was the ability to stream your iTunes music from any computer to any other computer on your local network. A year later that feature also disappeared, leaving you with the ability to stream to any computer on your local network, to a maximum of five people for a 24-hour period. What's happened is that the features have been chipped away one by one.

*RP: And consumers cannot avoid this gradual erosion of features because the system usually insists that they upgrade the software before they can play any new songs they buy?*

**CD:** Yes. And if you got a Comcast PVR<sup>90</sup> from your cable operator in order to record *Six Feet Under*, and through the course of the year you had it record the show, you found

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refer to a web site that programmatically pulls together content from several sources into an integrated experience. [http://en.wikipedia.org/wiki/Mashup\\_\(web\\_application\\_hybrid\)](http://en.wikipedia.org/wiki/Mashup_(web_application_hybrid)).

<sup>87</sup> MPEG-1 Audio Layer 3, more commonly referred to as MP3, is a popular digital audio encoding and lossy compression format invented and standardised in 1991 by a team of engineers directed by the Fraunhofer Society in Germany. It was designed to greatly reduce the amount of data required to represent audio, yet still sound like a faithful reproduction of the original uncompressed audio to most listeners. In popular usage, MP3 also refers to files of sound or music recordings stored in the MP3 format on computers. <http://en.wikipedia.org/wiki/MP3>.

<sup>88</sup> The iPod is a brand of portable digital media player designed and marketed by Apple Computer. <http://en.wikipedia.org/wiki/Ipod>.

<sup>89</sup> Creative Technology Limited is a listed manufacturer of computer multimedia products based in Singapore. The US subsidiary of the company is known as Creative Labs, Inc. Their products include large lines of MP3 players, speaker systems, webcams, video cards, networking components, and even a Liquid crystal display (LCD). [http://en.wikipedia.org/wiki/Creative\\_Labs](http://en.wikipedia.org/wiki/Creative_Labs).

<sup>90</sup> A Personal video recorder (PVR) is a device that records video to a digital storage medium. The two earliest consumer DVRs, ReplayTV and TiVo, were launched in 1999. Many satellite and cable companies are incorporating DVR functions into their set-top box. Having the broadcaster involved with (subsidising) the design of the DVR, and directly recording encrypted digital streams, can lead to fancy features — like the ability to use interactive TV on recorded shows, and pre-loading of programs. However, it can also lead

that at the end of the year — just before the DVD of *Six Feet Under* came out — every Comcast PVR erased every copy of the show that had been broadcast in America.

*RP: So the product that consumers buy isn't always the product they get?*

**CD:** Precisely. There was nothing on the tin when the consumer went into the shop that told them that that would happen. Even if they had asked the salesman if the PVR that they were buying would let them record *Six Feet Under*, and let them keep their recordings, he would have said yes.

In other words, the rights expression language that comes with the PVR allows Comcast to change the way that you watch movies and TV without your permission, and there is no way for you to know all the ways the rights expressions can be stuck together to restrict your liberty.<sup>91</sup>

*RP: This is also a consumer rights issue then?*

**CD:** Sure. It is like selling you a car and then sending ninjas to your house every night to remove features from it, and you don't get any say in the matter. So, for instance, in the morning you find it has fewer cup holders than the night before.

That's unfair commerce practice. You as the owner of a technology should have the right to decide whether or not you want to allow someone to update it in a way that removes a feature.

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to too much control by the broadcaster — such as denying the ability to skip advertisements and automatically expiring recordings after a time determined by the broadcaster.

[http://en.wikipedia.org/wiki/Digital\\_video\\_recorder](http://en.wikipedia.org/wiki/Digital_video_recorder).

<sup>91</sup> The most controversial use of DRM to date was discovered after this interview took place. In October 2005 a computer security researcher discovered that Sony BMG was installing anti-piracy software called Extended Copy Protection, or [XCP](#), on PCs that played Sony BMG's music CDs. The software was based on a [rootkit](#) (used by hackers to disguise [spyware](#) and [malware](#)). In response to criticism sparked by this discovery, Sony BMG released a software utility to remove the rootkit component of XCP from affected Windows computers. When this removal utility was analysed, however, it was discovered that the fix only exacerbated the privacy and security concerns, since it merely unmasked the hidden files installed by the rootkit, but did not actually remove them, and in order to download the uninstaller people had to provide an e-mail address. The program was also reported to install additional software that could not be uninstalled. On November 18<sup>th</sup> 2005, following further bad publicity, Sony BMG provided a "new and improved" removal tool to remove the rootkit component of XCP, and on November 15<sup>th</sup> VNU.net [announced](#) that Sony BMG had promised to stop using XCP on it CDs. Sony BMG also recalled unsold CDs, and invited consumers to exchange their CDs with versions lacking the software. To complete Sony's embarrassment, however, a number of software experts published evidence indicating that the XCP software (developed by [First 4 Internet](#)) infringes on the copyright of a number of open source software tools. [Class action suits](#) were also brought against Sony, turning its anti-piracy efforts from a PR disaster into a potentially hugely costly drain too. The suit was [settled](#) in December 2005. [http://en.wikipedia.org/wiki/Sony\\_rootkit](http://en.wikipedia.org/wiki/Sony_rootkit). To read Doctorow's coverage of the debacle see:

[http://www.boingboing.net/2005/11/14/sony\\_anticustomer\\_te.html](http://www.boingboing.net/2005/11/14/sony_anticustomer_te.html).

## Innovation Dark Age

*RP: You said that on previous occasions copyright was adapted to fit around new technologies. Something changed?*

**CD:** It did. And that is why we are in a fairly troubling era. What happened historically was that every time technology developed last year's pirates — who are always this year's merchants — said, "We are the last generation of legitimate pirates. These new pirates are bad pirates: you should stop the bad pirates."

*RP: So everyone who goes up the ladder wants to pull it up behind them and batten down the hatch?*

**CD:** Indeed. The people in Hollywood, by the way, are directly descended from pirates. As others have pointed out, movie making was invented in New Jersey, but the studios were established in Hollywood. This was simply to avoid getting busted for pirating the patents of Thomas Edison!<sup>92</sup>

What's changed is that where in the past the pirates were ignored, this time around they are being listened to.

*RP: Why is that? Have politicians simply buckled under the pressure of corporate lobbying?*

**CD:** There is certainly an element of that, and the creation of the World Intellectual Property Office (WIPO)<sup>93</sup> was a major piece in this. WIPO was originally a commercial body: it was a consortium of rights holder interests. But they realised they would get more done if they were part of the United Nations. So they went to the United Nations and they pledged to behave like a UN agency.

A UN agency, by the way, is a humanitarian agency, and so is charged with seeing to it that development occurs.

*RP: So the promise of WIPO was that it would promote development?*

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<sup>92</sup> Thomas Edison owned almost all the patents relevant to movie production at that time. The distance from New Jersey made it more difficult for Edison to enforce his patents.

[http://en.wikipedia.org/wiki/Movie\\_studio](http://en.wikipedia.org/wiki/Movie_studio).

<sup>93</sup> The World Intellectual Property Organisation (WIPO) is one of the specialised agencies of the United Nations. WIPO was created in 1967 by the founding member States, "desiring, in order to encourage creative activity, to promote the protection of intellectual property throughout the world". Its roots lie in an international organisation called the United International Bureaux for the Protection of Intellectual Property, which was created in 1893. WIPO became a UN agency with a mandate to administer intellectual property matters recognised by the member States of the UN in 1974. It has 183 member states, and administers 23 international treaties. The headquarters of WIPO are in Geneva, Switzerland.

<http://en.wikipedia.org/wiki/Wipo>.

**CD:** Yes. They argued that IP can be used to spur development, and they proposed coming up with policies that would promote creativity and development. But they didn't.

WIPO is also a body that can write treaties, but it doesn't write treaties in the interests of the public.

*RP: They do however write treaties; treaties, moreover, which are having quite an influence on intellectual property laws.*

**CD:** Precisely. Consider, for example, how we got the DMCA in America. In 1995 we had a set of hearings on the Internet called the National Information Infrastructure Hearings.<sup>94</sup> Al Gore led these, which is why he later claimed to have invented the Internet!<sup>95</sup> (What he actually meant was that he held the hearings by which the Internet was demilitarised, and privatised.)

Anyway, a guy named Bruce Lehman<sup>96</sup> — who in those days represented the US patent office — brought a paper to those hearings in which he proposed a regime for the Internet where only technologies that allowed monitoring would be funded. He also proposed that every data packet that passed through the Internet should be monitored, and that any packets containing infringing material should be stopped in their tracks, and dropped on the floor.

*RP: But his proposal fell on deaf ears?*

**CD:** It did. Congress told Lehman to get lost. So he went to WIPO, and he had them pass what are called the Internet Treaties: The World Copyright Treaty<sup>97</sup> and The WIPO Performances and Phonograms Treaty.<sup>98</sup> Essentially, these two treaties include cherry-picked elements from Lehman's 1995 proposal.

*RP: And as a member state, the US was therefore obliged to ratify the WIPO Treaties by passing the DMCA?*

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<sup>94</sup> The National Information Infrastructure (NII) was a telecommunications policy buzzword, coined under the Clinton Administration in the United States. It was a proposed, advanced, seamless web of public and private communications networks, interactive services, interoperable hardware and software, computers, databases, and consumer electronics to put vast amounts of information at users' fingertips. A side-effect of the initiative was a push by cultural industries to expand the scope of copyright.

[http://en.wikipedia.org/wiki/National\\_Information\\_Infrastructure](http://en.wikipedia.org/wiki/National_Information_Infrastructure).

<sup>95</sup> In an interview with CNN's Wolf Blitzer in March 1999, Al Gore said: "During my service in the United States Congress, I took the initiative in creating the Internet."

<http://www.cnn.com/ALLPOLITICS/stories/1999/03/09/president.2000/transcript.gore>.

<sup>96</sup> Bruce A Lehman was the Assistant Secretary of Commerce and Commissioner of Patents and Trademarks between 1993 and 1998. He was nominated by President Clinton on April 23<sup>rd</sup> 1993, and confirmed by Senate on August 5<sup>th</sup> 1993. During this short period of time, he was responsible for significant changes to the United States patent law. [http://en.wikipedia.org/wiki/Bruce\\_Lehman](http://en.wikipedia.org/wiki/Bruce_Lehman).

<sup>97</sup> The WIPO Copyright Treaty (WCT) was passed in 1996

<http://www.wipo.int/treaties/en/ip/wct/index.html>.

<sup>98</sup> The WIPO Performances and Phonograms Treaty (WPPT) was adopted in Geneva on December 20<sup>th</sup> 1996 <http://www.wipo.int/treaties/en/ip/wppt>.

**CD:** You've got it. So in 1998 the US enacted the DMCA, which essentially embodies the proposals made at the NII hearings. And there you have a classic example of policy laundering.<sup>99</sup>

**RP:** *WIPO has nearly 200 member states. Last time I looked nearly 60 of them had ratified the Internet Treaties. Clearly WIPO is having an impact on intellectual property laws around the world. In Europe, for instance, they were implemented by means of the EU Copyright Directive.*<sup>100</sup>

**CD:** That's right. The other big part of this, by the way, was the passage of TRIPS.<sup>101</sup>

**RP:** *TRIPS was an initiative of the World Trade Organisation (WTO) rather than WIPO wasn't it?*<sup>102</sup>

**CD:** Yes. But TRIPS ties copyright and patent policy to a country's other trade, so it was a major step. Failure to accede to the terms of TRIPS, for instance, could mean that a member state's Soya bean and steel exports are limited. That has been a major factor in seeing to it that developing nations — who have no interest in toeing the American line on copyright policy — have nevertheless toed the line.

**RP:** *International treaties, then, are a good way of forcing through legal changes that might not be achievable at the national level — policy laundering as you call it?*

**CD:** Yes.

**RP:** *Of course it is national courts that implement the law, and the way they interpret it can make a difference. However, cases like Napster and Grokster<sup>103</sup> are not perhaps*

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<sup>99</sup> Policy laundering is the use by government officials of reciprocal treaties or other agreements with other countries to justify violating legal restrictions on their powers within their own jurisdictions. In essence, "The treaty made me do it."

<sup>100</sup> The European Union (EU) directive 2001/29/EC of the European Parliament and of the Council of 22<sup>nd</sup> May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society, commonly known as the EU Copyright Directive or EUCD, is the EU's implementation of the 1996 WIPO Copyright Treaty. In its final form, it includes only very narrow exceptions to anti-circumvention measures and exclusive rights. As a result, it is generally regarded as a victory for copyright-owning interests over copyright users' interests. [http://en.wikipedia.org/wiki/Copyright\\_Directive](http://en.wikipedia.org/wiki/Copyright_Directive).

<sup>101</sup> TRIPS (Trade-Related Aspects of Intellectual Property Rights) is an international treaty which sets down minimum standards for most forms of intellectual property regulation within all member countries of the World Trade Organisation. TRIPS also specifies enforcement procedures, remedies, and dispute resolution procedures. <http://en.wikipedia.org/wiki/TRIPS>.

<sup>102</sup> The World Trade Organisation (WTO) is an international organisation which oversees a large number of agreements defining the "rules of trade" between its member states. The WTO is the successor to the General Agreement on Tariffs and Trade (GATT), and operates with the broad goal of reducing or abolishing international trade barriers. WTO headquarters are located in Geneva, Switzerland.

<sup>103</sup> Grokster Ltd. was a privately-owned software company based in Nevis, West Indies, whose viability is unclear following a United States Supreme Court ruling against its mainstay product, a peer-to-peer file sharing program for computers running the Windows operating system. The product is similar in look and feel to [Kazaa](#) which is marketed by [Sharman Networks](#).

*encouraging: they suggest that the courts — in the US at least — are happy to implement the new laws aggressively. In Grokster, for instance, the Supreme Court has essentially ruled that technology developers can now be held responsible for any copyright infringement that users of their technology engage in. This is OpenCola's worst nightmare become reality isn't it?*

**CD:** That's right. But the irony of the Grokster case is that although it was targeted at peer-to-peer technology, it will actually have no impact on it, because anyone can produce a peer-to-peer application.

*RP: You mean that developing P2P technology doesn't require the kind of investment that OpenCola needed?*

**CD:** Exactly. You can make peer-to-peer in twelve lines of Perl.<sup>104</sup> If you can do it in twelve lines of Perl, and you don't need investment to make it, and you can make it in countries that are outside of the jurisdiction of the Supreme Court, then Grokster will have no measurable impact on peer-to-peer, which was what Grokster was about.

*RP: So Grokster may prove a short-term victory for media companies?*

**CD:** Indeed. The fact is that the majority of Internet users use file-sharing software today, and no matter how many lawsuits the labels win against their own customers and people like Grokster, peer-to-peer isn't going to stop. It will outlast today's generation of technophobic record executives, who right now are in the process of steering their companies to slow, spectacular suicide.

*RP: Are you saying that the Supreme Court ruling on Grokster will have no impact at all?*

**CD:** Not on peer-to-peer technology. Any technology that requires substantial capital investment, however, will be chilled by the need to pass the court-determined test that emerged with Grokster.

*RP: What are the implications of that?*

**CD:** It means that technology companies are going to have to demonstrate that they haven't designed a technology that eschews control, which they were able to do before. That in turn means that they will have to have maximum control; and if someone starts to

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In June 2005, in *MGM v. Grokster*, the US Supreme Court unanimously held that file-sharing companies are to blame for what users do with their software. <http://en.wikipedia.org/wiki/Grokster>. In February 2006, following an order from Australia's Federal Court, Sharman Networks cut off Australians' access to its Web site. While people with an Australian IP address who have already downloaded Kazaa can continue to use it, Sharman is warning them not to do so. <http://www.kazaa.com/us/index.htm>.

<sup>104</sup> Perl (Practical Extraction and Report Language) is an interpreted procedural programming language designed by [Larry Wall](#). Perl is often used as a "glue language", tying together systems and interfaces that were not specifically designed to interoperate. Systems administrators use Perl as an all-purpose tool; short Perl programs can be entered and run on a single command line. <http://en.wikipedia.org/wiki/Perl>.

do something illegal with their technology they will need to know about it, and they will need to be able to stop it.

Just imagine if that test had been required of automotive manufacturers, or e-mail software makers, or people who make hammers? This is an industrial burden, a design burden, that is much higher than anything we have set before, and it could prove the end of the world for technology — in America at least.

*RP: So we could be looking at an innovation dark age?*

**CD:** Yes, I think so. We could end up in a world where the features that we get are the features that are approved by incumbent industries — and we have already seen what those look like.

We could end up in a world in which the kind of creative explosion that we have seen online is marginalised and criminalised.

And we could end up in a world in which people who have cool ideas don't get to bring them to market unless they can satisfy state apparatchiks that they won't disrupt the official government-sanctioned businesses.

## **Open Spectrum**

*RP: You mentioned earlier that you have a small practice in spectrum allocation. I guess your interest here is in so-called open spectrum.<sup>105</sup> As I understand it, the claim made by advocates of open spectrum is that where today governments license different parts of the spectrum to individual companies or organisations, new smart technologies will obviate the need to allocate spectrum, because we will be able to share it in the way we share the Internet infrastructure?*

**CD:** Right. We can change the current dedicated-use allocation model into a mixed-use allocation model.

*RP: This is a good thing?*

**CD:** It is. The long-term possibility of open spectrum, and the use of very smart cognitive radio devices, is that we could end up in a world where the incremental cost of sending a

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<sup>105</sup> Open spectrum (also known as free spectrum) is a movement to get the government to provide more unlicensed spectrum, radio frequency spectrum that is available for use by all. Proponents of the "commons model" of open spectrum advocate a future where the entire spectrum is shared, using Internet protocols to communicate with each other, and smart devices to find the most effective energy level, frequency, and mechanism. Previous government-imposed limits on who can have stations and who can't will be removed, and everyone will be given equal opportunity to use the airwaves for their own radio station, television station, or even broadcast of their website. [http://en.wikipedia.org/wiki/Open\\_spectrum](http://en.wikipedia.org/wiki/Open_spectrum).

packet from anywhere to anywhere else is zero. If that happens we end up with a lot more free speech — which is great.

*RP: You wrote a short story about open spectrum called Liberation Spectrum.<sup>106</sup> What was your aim?*

**CD:** *Liberation Spectrum* is about the kinds of conflicts that you could see from the inability of a regulator to keep pace with this stuff. Interestingly, it also merges with DRM issues, since the fundamental unit of a smart radio is something called a software-defined radio?

*RP: What is a software-defined radio?*

**CD:** It's a radio that can automatically change the frequency in which it transmits and receives by loading different software. Essentially you have a radio that can say: "This spectrum is busy, so I will use that spectrum."

Used in connection with things like phased array antennas<sup>107</sup> people can use this bit of spectrum to narrow beam data to this guy, and that bit of spectrum to beam data to that guy, and so on. The point is that it is a much more efficient way of using spectrum.

*RP: How does DRM fit into this?*

**CD:** Because right now there are burgeoning regulations regarding who is allowed to build a digital television receiver, or a DAB<sup>108</sup> radio receiver. These regulations mean that you can't ship a general-purpose radio that could be turned into a digital television — you have to ship radios that are locked in a way that precludes them from being turned into televisions.

As a consequence, they can't be used in connection with open source and free software, as you can't have a software-defined radio that is open source.

*RP: Because if they are open source they are by definition not capable of being locked?*

**CD:** Right. If they are tamper resistant they cannot be open source.<sup>109</sup> And since the one technology that is eminently capable of receiving a digital television signal is a software defined radio you have a rule that says software defined radio is illegal unless it's proprietary, or at least you are not allowed to change its characteristics.

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<sup>106</sup> *Liberation Spectrum*, Cory Doctorow, Salon, January 16<sup>th</sup> 2003.

[http://www.salon.com/tech/feature/2003/01/16/liberation\\_spectrum](http://www.salon.com/tech/feature/2003/01/16/liberation_spectrum).

<sup>107</sup> A phased array is a group of antennas in which the relative phases of the respective signals feeding the antennas are varied in such a way that the effective radiation pattern of the array is reinforced in a desired direction and suppressed in undesired directions. [http://en.wikipedia.org/wiki/Phased\\_array](http://en.wikipedia.org/wiki/Phased_array).

<sup>108</sup> Digital audio broadcasting or DAB is a developing technology for broadcasting audio programming in digital form. [http://en.wikipedia.org/wiki/Digital\\_audio\\_broadcasting](http://en.wikipedia.org/wiki/Digital_audio_broadcasting).

<sup>109</sup> Because open source implies that the software code is made freely available to all, and that anyone can change and develop that code.

*RP: Is this restriction something that manufacturers will control?*

**CD:** Well, the US broadcast licence flag<sup>110</sup> would have required it. Likewise the regulation that digital video broadcasters are hoping to get in Europe would require that all devices capable of receiving a digital television signal be built in a way that is tamper resistant.<sup>111</sup>

*RP: So this is an innovation issue again? If developers cannot access these systems they can't improve them?*

**CD:** Absolutely. The future of cognitive radio<sup>112</sup> will surely depend on open source tinkering — it is the kind of thing that you need to be able to freely innovate in. You need a base of stuff that is already built, and then you try out new ideas and experiment in order to find out what works and what doesn't.

If they are tamper resistant then no one will ever figure out how to make better cognitive radios, and we'll never realise the efficiencies open spectrum could provide.<sup>113</sup>

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<sup>110</sup> A broadcast flag is a set of status bits (or "flags") sent in the data stream of a digital television program that indicates whether or not it can be recorded, or if there are any restrictions on recorded content. Possible restrictions include inability to save a digital program to a hard disk or other non-volatile storage, inability to make secondary copies of recorded content (in order to share or archive), forceful reduction of quality when recording (such as reducing high-definition video to the resolution of standard TVs), and inability to skip over commercials. The stated intention of the broadcast flag was to prevent copyright infringement, but many have asserted that broadcast flags interfere with the fair use rights of the viewing public. In the United States, new television receivers using the ATSC standard were supposed to incorporate this functionality by July 1<sup>st</sup> 2005, but a federal court struck down the Federal Communications Commission's rule to this effect on May 6<sup>th</sup>. [http://en.wikipedia.org/wiki/Broadcast\\_flag](http://en.wikipedia.org/wiki/Broadcast_flag).

<sup>111</sup> Founded in 1993, the Digital Video Broadcasting Project (DVB) is a standards-specifying body created to specify standards for digital television in Europe, Australia, and much of Asia. In a document produced for the EFF in 2005, Doctorow points out that in 2003 the DVB stepped outside its domain of specifying modulation schemes for satellite, cable, and terrestrial broadcasts, and undertook a radically different work-item: specifying a far-reaching system of use-restrictions on digital television programming. Called the Content Protection Copy Management (CPCM), this "European broadcast flag", argues Doctorow, goes much further in its ambitions of controlling content than the failed US broadcast flag. As such, he adds, it "represents a grave danger to national development priorities, social concepts of the family, competition, customary public rights in copyright, and innovation." [http://www.eff.org/IP/DVB/dvb\\_critique.php](http://www.eff.org/IP/DVB/dvb_critique.php).

<sup>112</sup> Cognitive radio is a paradigm for wireless communication in which either network or wireless node itself changes particular transmission or reception parameters to execute its tasks efficiently without interfering with the licensed users. This parameter alteration is based on observations of several factors from external and internal cognitive radio environment, such as radio frequency spectrum, user behaviour, and network state. [http://en.wikipedia.org/wiki/Cognitive\\_radio](http://en.wikipedia.org/wiki/Cognitive_radio).

<sup>113</sup> And the threats keep coming. In another example of policy laundering, WIPO is currently trying to push through a "Treaty on the Protection of Broadcasting Organisations". If adopted, this will give broadcasters 50 years of copyright-like control over the content of their broadcasts, even when they have no copyright in what they show. Critics claim it could pose a greater threat than the failed US broadcast flag, appropriate public domain material, and threaten free and open source software.

([http://www.wipo.int/meetings/en/doc\\_details.jsp?doc\\_id=57213](http://www.wipo.int/meetings/en/doc_details.jsp?doc_id=57213)). [Commenting](#) on Boing Boing, Doctorow argued: "The Broadcast Treaty is a proposal from a WIPO Subcommittee that's supposedly about stopping "signal theft." But along the way, this proposal has turned into a huge, convoluted hairball that

## Writer

**RP:** *One of the many hats you wear is that of an award-winning science fiction writer.<sup>114</sup> When did you first become interested in science fiction?*

**CD:** My dad was a comic book reader, and he was a Conan<sup>115</sup> fan. And when I was growing up he would tell me Conan stories re-cast as socialist, feminist, and civil rights parables. It starred an ethnic and gender balanced trio called Harry, Larry and Mary. That was a start. I had also always been a reader, and when I was a kid I loved *Charlie and the Chocolate Factory*<sup>116</sup> and Lewis Carroll.<sup>117</sup>

Then, when I was nine I went on a school trip down to the science fiction bookstore, and the woman behind the counter — who is now a very accomplished science fiction writer named Tanya Huff<sup>118</sup> — recommended that I buy H Beam Piper's<sup>119</sup> *Little Fuzzy*. That book is a cracking adventure story (although I reread it recently, and I have to say that Piper writes like he's wearing boxing gloves!). Anyway, *Little Fuzzy* got me hooked and I became a voracious reader of science fiction.

**RP:** *When did you start writing?*

**CD:** When I was 12.

**RP:** *How?*

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threatens to make the PC illegal, trash the public domain, break [copyleft](#) and put a broadcast flag on the Internet." See also the EFF's page: [http://www.eff.org/IP/WIPO/broadcasting\\_treaty](http://www.eff.org/IP/WIPO/broadcasting_treaty).

<sup>114</sup> Doctorow won the [John W Campbell Award](#) for best new writer in 2000, the [Locus Award](#) for Best First Novel for *Down and Out in the Magic Kingdom* in 2003, and in 2004 he won the [Sunburst Award](#) for best Canadian Science Fiction Book for his short story collection, *A Place So Foreign and Eight More*. Published by Four Walls Eight Windows in 2003, the collection included his short story *Ownz0red*, which was a finalist for the 2003 [Nebula Award](#). In 2006 his short story *I, Robot*, was a finalist for the 2006 [Hugo Award](#) for best novelette. <http://craphound.com/000634.html>.

<sup>115</sup> Conan the Barbarian is a literary character created by Robert E Howard in a series of fantasy stories published in *Weird Tales* in the 1930s. [http://en.wikipedia.org/wiki/Conan\\_The\\_Barbarian](http://en.wikipedia.org/wiki/Conan_The_Barbarian).

<sup>116</sup> *Charlie and the Chocolate Factory*, Roald Dahl, Puffin Books (June 1998)

<sup>117</sup> Lewis Carroll, the pen name of Charles Lutwidge Dodgson, was a British author, mathematician, logician, Anglican clergyman and photographer. His most famous writings are *Alice's Adventures in Wonderland* and its sequel *Through the Looking-Glass*, as well as the comic poem "The Hunting of the Snark", and the nonsense poem "Jabberwocky". [http://en.wikipedia.org/wiki/Lewis\\_Carroll](http://en.wikipedia.org/wiki/Lewis_Carroll).

<sup>118</sup> Tanya Sue Huff is a Canadian fantasy author born in Halifax, Nova Scotia. [http://en.wikipedia.org/wiki/Tanya\\_Huff](http://en.wikipedia.org/wiki/Tanya_Huff).

<sup>119</sup> Henry Beam Piper was an American writer of science fiction. *Little Fuzzy* is the first of three science fiction novels that take place on the planet Zarathustra, which has been settled by a million humans. The planet is controlled by the Chartered Zarathustra Company. [http://en.wikipedia.org/wiki/H.\\_Beam\\_Piper](http://en.wikipedia.org/wiki/H._Beam_Piper).

**CD:** The Ontario Ministry of Education had a very aggressive programme in which teachers could do four years at 85% salary, and then self-fund a fifth year off. One year that was what my parents did, and we went to Europe for six months.

We drove through 14 countries in Renault 9, including visiting my family in the former Soviet Union. During the trip I started writing a science fiction novel in the back of the car. That's when I decided I wanted to write science fiction for a living.

**RP:** *You saw it as a career from day one?*

**CD:** I did. I started submitting science fiction to markets when I was 16, and I sold my first story into the semi-professional market when I was 17. My first professional sale came when I was 26, which was *At Lightspeed, Slowing*.<sup>120</sup> I then immediately sold two more stories, one of which actually came out before *At Lightspeed, Slowing* — a story called *Craphound*.<sup>121</sup>

**RP:** *Was it easy to become a published author?*

**CD:** No. I had to go through a 10-year grind of rejection letters, and semi-professional sales. I had figured I would sell my first novel by the time I was 18, but *Down and Out in the Magic Kingdom* didn't actually come out until 2003, when I was 31. So it was 13 years late!

**RP:** *Is the title a reference to George Orwell's *Down and Out in Paris and London*?<sup>122</sup>*

**CD:** Actually, it wasn't my title. My friend Steve Siminsky came up with it.

**RP:** *It works well as a title: Orwell's book is about living in poverty in a world of scarcity. Your book describes a different kind of poverty in a world where there is no scarcity.*

**CD:** There is an element of that; and I have been an Orwell fan all my life. Riffing on other people's stuff is also part of my aesthetic. But don't read too much into the title: it was applied very much *post factum*.

Essentially the book is a kind of a parable of Napster. It's about what happens when the thing that used to be really expensive to produce becomes free, the fans take over, and the economics go away.

**RP:** *You have published two more novels since *Down and Out*?*

**CD:** Yes. *Eastern Standard Tribe* came out in 2003, and *Someone Comes to Town, Someone Leaves Town* was published in July 2005.

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<sup>120</sup> *At Lightspeed, Slowing*, Asimov's Science Fiction Magazine, April 2000.

<sup>121</sup> *Craphound*, Science-Fiction Age, March 1998.

<sup>122</sup> *Down and Out in Paris and London*, George Orwell, Harvest/HBJ Book (March, 1972).

*RP: What are you trying to achieve when you write?*

**CD:** I think the reason I write is to find out what is going on inside my own head. It's really like running a Ouija paddle across the board, and I often surprise myself in the process!

*RP: Can you give me an example of that?*

**CD:** When I was approaching the ending of *Someone Comes to Town* — which is 120,000 words and so longer than both the other two books I wrote added together — I realised that the ending I was moving towards wasn't going to work, and I would have to think up another ending.

So I wrote the other ending, and then thought: "OK, now I am going to have to go back and retrofit this to the text: find all the areas where I foreshadowed the first ending and make sure that the new ending fits." But as I went back through the book I realised that from the first page I had actually been writing towards this second ending. That was spooky.

*RP: Do you ever have trouble writing?*

**CD:** I had a long bout of writers block in my 20s, which I eventually broke through with hypnotherapy.

*RP: How did that work?*

**CD:** Have you ever had hypnotherapy?

*RP: No.*

**CD:** Well, you tend to be awake; talking like we are now. Anyway, there was this moment in the first session when the hypnotherapist said: "Your arm has gone very light". And it had: it was up in the air. It was just the funniest thing. I reached across with my other arm and pulled it down, but it immediately went back up. By now I was just laughing.

*RP: So you were conscious but your body was acting on its own?*

**CD:** Yes. I knew it was my arm, and I could wiggle my fingers; and if I made a conscious act of will I could bring it back down; but then it would float back up again. It felt like there was something else running my brain; at the same time it felt as though I had discovered a part of my brain I didn't know was there. Anyway, hypnotherapy cured my writers block.

What's interesting is that finding out that the ending I eventually chose in *Someone Comes to Town* was the ending I had apparently unconsciously known about all along was the same sort of experience.

*RP: When and how do you write?*

**CD:** Generally speaking I write every morning — and if I can't do it then I write it later on. I have written on the tube; I have written on escalators; and I have written in a lot of airport lounges. So every day I bang out 250 words in 20 minutes; and every year that amounts to one novel.

In terms of how I write: I don't really outline, but I do treatments and then kind of feel it as I go.

*RP: It's not a case of waiting for the muse to strike then?*

**CD:** No. I used to be a very ceremonial writer. I used to sit down at the keyboard and go: "You know, I have to go and vacuum"; or, "I have to win three hands of solitaire before I can let myself write." Or it would be some other thing. One day, however, I decided I could be a ceremonial writer, or I could just be a writer.

*RP: Like any job it's just a matter of putting in the hours then?*

**CD:** That's it. After all, I don't know any ceremonial garbage men, who have to perform a ceremony before they can pick up the bag and put it in the back of the truck. I also don't know any ceremonial doctors who — before they can figure out whether you have got cholera — have to go and vacuum the house, or play three hands of solitaire.

## **Cultural critic and blogger**

*RP: In addition to the science fiction writing you are also a journalist, and you co-edit the blog Boing Boing<sup>123</sup>. When Creative Commons interviewed you<sup>124</sup> you were described as a blogger, a cultural critic, an EFF wonk<sup>125</sup> and novelist. That's quite a portfolio.*

**CD:** True, but I have always been doing the same thing.

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<sup>123</sup> <http://www.boingboing.net>

<sup>124</sup> <http://creativecommons.org/text/doctorow>

<sup>125</sup> Wonk was originally a 1960s slang word applied to an excessively studious person (equivalent to "grind" or "nerd"). The origins of the term are obscure. It has been described as a simple reversal of "know," and attributed to Royal Navy slang for a learned but inexperienced midshipman. The term "policy wonk" — meaning someone both deeply knowledgeable about and fascinated by the details of government programmes — entered general usage in the 1990s during the administration of US president Bill Clinton. Admirers and detractors alike described the Clinton administration as a haven for policy wonks, Clinton and Vice-President Al Gore first among equals. <http://en.wikipedia.org/wiki/Wonk>

**RP:** Which is?

**CD:** Exploring the social and cultural ramifications of technology. Sometimes I have done it in a practical way; sometimes in a purely theoretical way. That is the essence of the journalism I do; it is the essence of the science fiction I write; it was the essence of my entrepreneurial work; and it is the essence of my activist work.

**RP:** Exploring the social and cultural ramifications of technology is an interesting way of describing it. Presumably, then, there is a good deal of political intent in your science fiction writing?

**CD:** There is clearly political intent, but I think that the political intent is lodged in that part of the brain where the thing that held my arm aloft lives. There is also some explicit political intent: the stories I am doing now with the same titles as famous sci-fi books, for instance, have political intent.

**RP:** Can you give me an example?

**CD:** Sure. For example, Ray Bradbury — whom I admire as one of the great prose stylists of the 20<sup>th</sup> Century — lost a lot of my respect when Michael Moore's *Fahrenheit 9/11*<sup>126</sup> came out ...

**RP:** The title of Michael Moore's film is a reference to Bradbury's novel *Fahrenheit 451* isn't it?

**CD:** Exactly, and Bradbury went off on a complete terror about how Michael Moore was an awful person for having stolen the title from him.<sup>127</sup> That really shocked me. *Fahrenheit 451* is the canonical fictional text on free expression — even more so I would say than *Nineteen Eighty-four*<sup>128</sup> — and to have this towering giant of free expression say something so pig ignorant was terrible.

So I set out to prove the point that free expression depends on the ability to build on what other people have done, without their permission. The first story I wrote is called *Anders Game*,<sup>129</sup> which is a reference to Orson Scott Card's *Enders Game*.<sup>130</sup>

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<sup>126</sup> *Fahrenheit 9/11* is a 2004 film by Michael Moore expressing his view on what happened to the United States after September 11<sup>th</sup>; and how the Bush Administration allegedly used the tragic event to further its agenda for unjust wars in Afghanistan and Iraq. [http://en.wikipedia.org/wiki/Fahrenheit\\_9/11](http://en.wikipedia.org/wiki/Fahrenheit_9/11).

<sup>127</sup> Ray Bradbury is an American fantasy, science fiction, and mystery writer known best for his 1950 short story collection *The Martian Chronicles* and his 1953 dystopian novel *Fahrenheit 451*, which is set in a world where books are banned and critical thought is suppressed. In an interview in June 2004 with Swedish daily *Dagens Nyheter*, Bradbury described Michael Moore as a thief and a "horrible human being" for using the word *Fahrenheit* in the title of his film.

<http://www.dn.se/DNet/jsp/polopoly.jsp?d=1058&a=272062&previousRenderType=2>.

<sup>128</sup> *Nineteen Eighty-four*, George Orwell, 1949.

<sup>129</sup> *Anda's Game*, Cory Doctorow, Salon, November 15, 2004.

[http://www.salon.com/tech/feature/2004/11/15/andas\\_game/index\\_np.html](http://www.salon.com/tech/feature/2004/11/15/andas_game/index_np.html) *Anda's Game* explores the theme of how property-rights are being applied to games.

It was also the first story that *Salon* published under a Creative Commons license.

The next one is called *I Robot*,<sup>131</sup> and I am working on one called *True Names* with a guy called Ben Rosenbaum.<sup>132</sup> *True Names*,<sup>133</sup> by the way, is a Vernor Vinge story.

**RP:** *So your response was to write a series of stories that re-work the titles of other people's books — to make the point that we all borrow from each other all the time?*

**CD:** Right. I also have a book planned called *The Man Who Sold the Moon* — which is a very famous novel by Heinlein.<sup>134</sup>

**RP:** *These are explicitly political in so far as they assert the right of creators to borrow from one another?*

**CD:** That's the meta point. Each story then goes through and deconstructs elements of social practice, where the writer of the original story has — in my view — engaged in sleight of hand to make something that is either odious or socially unworkable in the real world seem like something that is possible and even desirable.

So in the case of *I, Robot*....

Have you ever read the *I Robot* short story collection by the way?

**RP:** *That's the Asimov story that was filmed by Alex Proyas in 2004;<sup>135</sup> the one that includes the idea of programming robots to obey the "three laws"?*<sup>136</sup>

**CD:** Actually the film is based on a collection of short stories, not a novel; but, yes, the three laws. The point is that in the Asimov world there is only one kind of robot allowed, and there is only one company allowed to make them, and that company's monopoly on

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<sup>130</sup> *Ender's Game (The Ender Saga)*, Orson Scott Card, Orbit, 1987.

<sup>131</sup> *I, Robot* is a collection of science fiction short stories by Isaac Asimov, first published in 1950. In 2004 Twentieth Century Fox released a [film](#) that was attributed to Isaac Asimov's Robot Series. However, the film is technically based on *Hardwired*, a freelance script by Jeff Vintar, although it bears some significant resemblance to a pre-Asimov 1939 classic sci-fi short story, *I, Robot* by [Eando Binder](#) — after which the Asimov collection was named by its publisher, against Asimov's wishes.

<sup>132</sup> Benjamin Rosenbaum is a computer programmer and science fiction writer, born in New York. His work has appeared in *The Magazine of Fantasy & Science Fiction* and on the websites Writer Online and *Strange Horizons*. [http://en.wikipedia.org/wiki/Benjamin\\_Rosenbaum](http://en.wikipedia.org/wiki/Benjamin_Rosenbaum).

<sup>133</sup> Available in *The Collected Stories of Vernor Vinge*, Orb Books, 2002.

<sup>134</sup> Robert Heinlein was one of the most influential and controversial authors in science fiction. He was the first science-fiction writer to break into mainstream general magazines such as [The Saturday Evening Post](#) in the late 1940s with unvarnished science fiction, and he was among the first authors of bestselling novel-length science fiction in the 1960s. [http://en.wikipedia.org/wiki/Robert\\_heinlein](http://en.wikipedia.org/wiki/Robert_heinlein).

<sup>135</sup> <http://www.imdb.com/title/tt0343818>

<sup>136</sup> 1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.  
2. A robot must obey orders given it by human beings except where such orders would conflict with the First Law.  
3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law. [http://en.wikipedia.org/wiki/Three\\_Laws\\_of\\_Robotics](http://en.wikipedia.org/wiki/Three_Laws_of_Robotics)

making them persists for thousands of years. From a technology advocacy point of view this is terrible.

*RP: This feeds into your fears about DRM and an innovation dark age?*

**CD:** Precisely. Suppose we said that there were only three laws for computers, including one that said computers shall not copy bits unless they have a no copyright flag associated with them; or a permission bit that said computers shall always hand over your personally identifying information to a cop who presents a warrant? What if your computers were like this? It would be a dreadful world to live in. It would be totalitarianism.

So I wrote a story that remixes *Nineteen Eighty-four* with *I Robot*. The aim was to show how Asimov's ideas were socially unworkable, and that Asimov had — through literary sleight of hand — made something that is socially bad look socially good.

*RP: You frequently talk of the need for creators to, as you put it, "mine the culture".<sup>137</sup> This is the point you are making with these stories, but you clearly also accept that this as a two-way street — you encourage others to borrow from you too. Indeed, by publishing all your books under a Creative Commons licence you go further than that: you invite people to download electronic versions of your books for free, and to redistribute them non-commercially, and even to produce remixed versions of them. Why?*

**CD:** I do it for a number of reasons. In the short term, I'm actually generating more sales of my printed books this way. Sure, giving away eBooks displaces the occasional sale, when a downloader reads the book and decides not to buy it. But it's far more common for a reader to download the book, read some or all of it, and then decide to buy the print edition. I've given away more than half a million digital copies of *Down and Out in the Magic Kingdom*, and that sucker has blown through *five* print editions. So I'm not worried that giving away books is hurting my sales today.

But I also do it because I know that some day paper books will all but go away. We're already reading more words off more screens every day, and fewer words off fewer pages every day. The problem is that we don't yet know what this will mean, and how it will work.

*RP: One thing it could mean is that authors will find they have no way of earning money from their writing.*

**CD:** Maybe. But I'm an entrepreneur and I live and die by market intelligence. So I want people to download my books and do weird and cool stuff with them, and then email me with that precious market intelligence about what electronic text is for. That way perhaps I can be the first writer to figure out what the next writerly business model is.

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<sup>137</sup> E.g. Doctorow's written testimony to UK Select Committee on Culture, Media and Sport, September 11<sup>th</sup> 2004 [http://www.eff.org/IP/BBC\\_CMSC\\_testimony.php](http://www.eff.org/IP/BBC_CMSC_testimony.php)

*RP: That market intelligence may tell you that very few people are prepared to pay for electronic books, and no one wants them in print any more?*

**CD:** It might. Or it might just be that there is a time between the sunset of printed text and the appearance of robust models for unfettered distribution of electronic text during which the fortunes of novelists follow those of poets and playwrights and other ink-stained scribblers whose industries have cratered beneath them. If that happens, writerly income will come from incidental sources such as paid speaking engagements, columns, and commissioned articles. So the more people who have read and enjoyed my work, the more of these gigs I'll get.

In other words, I'm giving these books away to sell more books, to find out more about the market, and to increase my profile so that I can land speaking and columnist gigs. And don't get the wrong idea: I'm at it because I want to fill my bathtub with money and rub my hands and laugh and laugh and laugh, not because I'm some patchouli-scented, fuzzy-headed, "information wants to be free" info-hippie.

*RP: Another good way of increasing your profile, of course, is by blogging. What's the story behind your involvement with Boing Boing?*

**CD:** Mark Frauenfelder<sup>138</sup> founded Boing Boing as a print magazine<sup>139</sup> in 1988. He re-launched it as a blog in 2000, and I got involved at the time of the kafuffle over Dean Kamen's invention of the Segway.<sup>140</sup>

*RP: What was significant about the Segway for Boing Boing?*

**CD:** Well, no one knew what the Segway was but everyone was wondering. Since Mark is a trained engineer as well as a journalist he just went to the patent office site, ran a screen grab of the patent drawing, and posted it on Boing Boing. The story made it on CNN that night, and suddenly his readership went up from 200 to 7,000 readers.

*RP: So he needed more contributors?*

**CD:** Well, Mark realised that some of these new readers would be coming back the next day, but he was about to take a two-week trip to Hawaii. So he rang me up to ask if I could take it on while he was away — he had done a profile<sup>141</sup> of me for the *Industry Standard* and we had corresponded about some of my fiction when he was editing *Wired Online*.

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<sup>138</sup> Mark Frauenfelder is a writer and illustrator living in Los Angeles.

<http://www.boingboing.net/markf.html>.

<sup>139</sup> [Mark Frauenfelder](#) and [Carla Sinclair](#) founded Boing Boing as a zine in 1988. Issues were subtitled "The World's Greatest Neurozine". [http://en.wikipedia.org/wiki/Boing\\_Boing](http://en.wikipedia.org/wiki/Boing_Boing).

<sup>140</sup> The Segway is a self-balancing dual electric servo, stand-up scooter with two wheels, invented by Dean Kamen. Prior to its demonstration on December 3<sup>rd</sup> 2001, various reports and rumours of a revolutionary invention could be found in the media, but no details were available. <http://en.wikipedia.org/wiki/Segway>

<sup>141</sup> <http://www.thestandard.com/article/0,1902,19498,00.html>.

As a result I ended up editing Boing Boing for two weeks. When Mark came back he liked what I had been doing, and asked me to stay on. I did, and the rest is history.

## **Spiritual Progeny**

*RP: Let's return to EFF for a moment. Right now we are witnessing huge battles over intellectual property, and some fascinating debates about the respective merits of open versus closed systems, and free versus proprietary technologies, and EFF is right in the middle of many of these debates. The struggle appears to flow from the fact that in the so-called knowledge economy more and more of what we trade in is information and other intangible goods. Certainly many people argue that intellectual property — including patents and copyright — has become the raw material of the information age, and so far more valuable as a result.*

**CD:** Sure, and that is a very reductionist way of looking at it.

*RP: Why?*

**CD:** Because if all you need are exclusive rights in order to stimulate the economy, then we could name one company as the official movie company and they could make one movie a year.

*RP: That, of course, would be absurd. I assume your point is a rhetorical one.*

**CD:** You know one interesting test of the extent to which exclusive rights promotes innovation is the European Database Right.<sup>142</sup> This says that if you compile a database of non-original facts — say the phone numbers of everyone in London, or the names of every colour and its spectral equivalent — then you can assert a 15-year monopoly over the use of that information.

Now if you believe that exclusive rights spur innovation you might expect that the new law would see more databases produced. In reality, the database industry has been flat for 25 years in Europe. In America — where there is no database copyright — by contrast, the database industry has grown 25 fold in the last 25 years. The only European growth has been through the acquisition of American companies that do most of their trading in America.

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<sup>142</sup> Database rights are a form of exclusive right introduced by European Union Law to those countries that follow EU Law in 1997. In most countries databases are covered by copyright law to some degree, as being a work that shows originality in its selection, coordination and arrangement. The lawmakers of the European Union decided that in order to provide greater protection to collections of information they should have a unified legal protection for databases. To do this they created a *sui generis* right called a database right. Database rights lasts for 15 years under this regime, but can be extended if the database is updated. The policy disallows copying of substantial parts of a database (including frequent extraction of insubstantial parts) and in that respect is similar to copyright. [http://en.wikipedia.org/wiki/Database\\_rights](http://en.wikipedia.org/wiki/Database_rights). See also <http://news.ft.com/cms/s/99610a50-7bb2-11da-ab8e-0000779e2340.html>.

**RP:** *So exclusive rights are not essential to a knowledge economy.*

**CD:** Exactly.

**RP:** *Might the reverse be true: could it be that today's technologies require openness in a way that previous technologies did not? Open Source people, for instance, argue that software is now so complex that it requires a very large number of eyeballs to root out all the bugs. This, they say, necessitates greater openness. I was also struck by your comment earlier that in order to develop cognitive radio unrestricted access to the technology is required?*

**CD:** Eric Raymond has a great riff about this, where he talks about the difference between chemistry and alchemy.<sup>143</sup> There was a 500-year dark age of alchemy, he says, during which every single alchemist had to discover for himself the hard way that drinking mercury was bad for you, and he then took that secret to his grave.

Today we have chemistry, and the difference between chemistry and alchemy rests on whether or not you publish the outcome of your experiments. Once people started publishing the outcome of their experiments the world changed in a very short time. What had been a collection of superstitions that killed you as often as it advanced your understanding of the natural world turned into a science.

**RP:** *So there is nothing different about modern technologies that necessitates greater openness?*

**CD:** What has really changed is the ability to collaborate. We now live in a world where the barriers to knowledge are coming down; the barriers to access are coming down; and so the barriers to collaboration are coming down.

For example, Charlie Stross<sup>144</sup> and I wrote a story called *Rapture of the Nerds* having never previously met each other. He lives in Scotland and at that time I was in San Francisco. Moreover, we wrote it in the space of a few weeks. That is the kind of collaboration the Internet enables: two people who have never met each other can work on a fairly substantial creative effort.

**RP:** *When John Perry Barlow, Mitch Kapor and John Gilmore founded EFF in 1990 you were still at school. In that sense you are a next-generation cyber activist.*

**CD:** It's true. And in some sense I am their spiritual progeny. EFF has a very, very, proud history, and it is humbling to be a piece of that, and to be around those people. It is like being in the presence of greatness.

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<sup>143</sup> *The Cathedral and the Bazaar*, Eric Raymond, O'Reilly, 1999.

<sup>144</sup> Charles David George Stross is a writer based in Edinburgh, Scotland. His works range from science fiction and Lovecraftian horror to fantasy.

*RP: Looking back, where do you think EFF got it wrong?*

**CD:** One of the obvious things we failed to do early on was to go to Geneva in 1996, and stop the WIPO Treaties from being passed. That was a big mistake.

What we also failed to do early on was to challenge the idea that merely setting a work down on the Internet creates a fixation for the purposes of copyright, and that that should therefore have the same rights and privileges accruing to it that a traditional fixation of a work does — because clearly that catches a lot of stuff that we would never have thought of as copyrightable works.

*RP: For example?*

**CD:** Well, conversations aren't usually considered copyrightable. When that conversation is done by e-mail, however, it suddenly is. So we missed the opportunity to at least examine that metaphor. One of the dark days of American copyright history, by the way, was when it acceded to the Berne Treaty,<sup>145</sup> which requires that copyright come into existence automatically at the moment of fixation.

*RP: Why is this significant?*

**CD:** Because historically in America if you wanted copyright you had to send a copy of the work to the Library of Congress, and pay a filing fee. That formality meant that every work that anyone cared about — every work that was copyrighted — was on file. And if a work was on file it had rights holder associated with it.

*RP: And if there is a record of the rights holder then you know whom to contact if you want to reuse the work.*

**CD:** Right. It also meant, of course, that if a work wasn't on file you knew that you could do with it what you would. So eliminating formalities has turned everything, from napkin doodles to e-mail to — depending on where you are in the world — a song that you whistle in the shower, into a copyrighted work.

*RP: The principle of automatic copyright is a European tradition of course.*

**CD:** Indeed; and it is a really dangerous one. It has created a world of orphaned works.<sup>146</sup>

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<sup>145</sup> Fixation in law refers to a recording. Only fixations can be copyrighted, not the ideas behind those fixations. Copyright under the Berne Convention is an automatic right. In other words, once the US acceded to the Berne Treaty, any "fixations" no longer had to be formally registered in order for them to enjoy the protection of copyright.

[http://en.wikipedia.org/wiki/Berne\\_Convention\\_for\\_the\\_Protection\\_of\\_Literary\\_and\\_Artistic\\_Works](http://en.wikipedia.org/wiki/Berne_Convention_for_the_Protection_of_Literary_and_Artistic_Works).

<sup>146</sup> Orphaned works are copyrighted works where the rights holder is hard to find. Because the cost of finding the owner is so high, creators cannot build on orphaned works, even when they would be willing to pay to use them. In many cases the works were abandoned because they no longer produced any income.

[http://en.wikipedia.org/wiki/Orphan\\_works](http://en.wikipedia.org/wiki/Orphan_works).

*RP: But given the flood of new material appearing on the Internet do you not worry that reintroducing formalities would introduce an unnecessary burden on the system?*

**CD:** Well, it may be that one of the things that led people to reject formalities back then was that they thought formalities were too cumbersome. But they don't have to be cumbersome.

*RP: How do you mean?*

**CD:** In the age of the network we could come up with automated formalities that would have the same relationship to the formalities government bureaucracies like the US Copyright Office manage as a plane ticket booked for you by a high street travel agent has to a ticket that you buy online with easyJet.<sup>147</sup>

So we missed that opportunity, which is a great shame because it would have created the idea that on the Internet — unless you saw a notice saying otherwise — works you come across can be freely used. In other words, authors would need to take some affirmative step if they didn't want their work to be freely used.<sup>148</sup>

*RP: This is a problem that Creative Commons attempts to fix isn't it?*

**CD:** Well, Creative Commons comes at it from the opposite direction: it says that you have to take an affirmative step, to say "No Copyright", or "Less Copyright".

*RP: So the presumption with Creative Commons is that copyright applies unless it is stated otherwise. You, however, believe that it would be better if the presumption was that people could do what they want with this content unless the rights holder has asserted some or all of their rights?*

**CD:** Yes.

## **Fags, food and Tiki bars**

*RP: I am curious about your politics. One of your co-editors at Boing Boing, David Pescovitz<sup>149</sup> described you as being "extreme left, verging towards communism?" Is that accurate?*

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<sup>147</sup> easyJet is a low cost airline officially known as easyJet Airline Company PLC. Based at London's Luton Airport, it is renowned for its "no frills" approach to air travel. <http://www.easyjet.com>

<sup>148</sup> Faced with growing criticism over the so-called "orphaned works problem" Congress asked the US Copyright Office to investigate the matter. Accordingly, on January 31<sup>st</sup> 2006 the Copyright Office submitted a 200-page report to the Senate Judiciary Committee, in which it confirmed that there is a problem, and suggested that new legislation be introduced to address it. The report is available online at <http://www.copyright.gov/orphan>.

<sup>149</sup> David Pescovitz is the writer-in-residence for UC Berkeley's College of Engineering and the Berkeley Sciences, and a co-editor of Boing Boing. He is also special projects editor for MAKE: Magazine and an

**CD:** Hah.

**RP:** *He also likened you to Abbie Hoffman.<sup>150</sup> I find this surprising because the norm for children of far-left parents is to rebel and, say, join the Republican Party or some other right-wing political party?*

**CD:** I am flattered by David's characterisation, but in reality I am on a different axis to other people. I'm actually at right angles to the left-right axis.

**RP:** *So what are your politics?*

**CD:** I am an agnostic. I believe in personal liberty, and I believe in social democracy. However, I am not a libertarian, and I am not a communist. I believe in markets, but I also believe in the civil society, and the ability of the civil society to successfully correct market failures, and to see to it that every person gets an equal opportunity. I don't think that is either a left wing or a right-wing position.

**RP:** *What is it then?*

**CD:** I guess it's a social democratic position, with the difference that it is a de-centralised form of social democracy. Perhaps that's not such a bad characterisation: de-centralised social democracy.

For the record, however, I am a great admirer of Abbie Hoffman!

**RP:** *You moved to Britain in 2004. What has been your impression of London?*

**CD:** I love London. It's the best city I have ever lived in.

**RP:** *What do you like?*

**CD:** It is so urbane. I love grace notes like the dividers on the roads that divide incoming and outgoing traffic, and then have breaks at regular intervals in case you get it wrong. There are so many grace notes to London.

**RP:** *Is it all good?*

**CD:** Well, there are elements of British design that are terrible, and in particular British banks. I think every British banker should be lined up against a wall and shot. The way

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affiliate researcher with the Institute For The Future, a non-profit thinktank in Palo Alto, California.

<http://pesco.net/bio.html>

<sup>150</sup> Abbott "Abbie" Hoffman was a social and political activist in the United States, co-founder of the Youth International Party ("Yippies") and, later, a fugitive from the law who lived under an alias following a conviction for allegedly dealing cocaine. He came to prominence in the 1960s, but practiced most of his activism in the 1970s and has remained a symbol of the youth rebellion of that decade.

[http://en.wikipedia.org/wiki/Abby\\_hoffman](http://en.wikipedia.org/wiki/Abby_hoffman).

that British banks operate is so shocking it is barely conceivable. I thought I had just picked the wrong bank or something. But it turns out that they are all as bad.

*RP: David Pescovitz tells me you used to "smoke like a fucking chimney", and then suddenly you stopped. He said it was as if you had suddenly re-programmed yourself.*

**CD:** Yea.

*RP: Then you gave up caffeine; then you went on the Atkin's diet. That's impressive programming!*

**CD:** It wasn't in that order. I gave up drinking first. In fact, I gave up drinking by accident.

*RP: You gave up drinking by accident?*

**CD:** Well, I had never been a huge drinker, but I had always loved the accoutrements: when I was in Toronto I had a huge warehouse space — an illegal flat that my ex. and I shared. And I had a Tiki bar<sup>151</sup> — a bamboo bar with ships — bongo drums, red flock wallpaper, and a mirror back bar with peeing-boy liquor dispensers and the like. I also had novelty liquor bottles with wind-up ballerinas in them and so on. It was just fantastic.

*RP: Why on earth would you give up drinking then?*

**CD:** Starting in my mid-20s I found that when I had a drink I would have a hangover the next day, no matter how little I drank. Consequently I would just drag my ass around all day. By then I had become so busy that when someone offered me a drink I would find myself saying: "You know I've got too much to do tomorrow". One day I looked around and I realised it had been a year since I had had a drink, and I concluded that I was not a drinker any more. So it just sort of happened.

*RP: And the diet?*

**CD:** When I was in my early 20s I lived in Costa Rica, working for an NGO<sup>152</sup> doing sustainable development work — basically I was digging latrines and building a school in a swamp, in a village occupied by Nicaraguan war refugees. While I was out there I got typhus and lost a ton of weight. Between that and the exercise I was really buff when I came home.

Later, however, I noticed that I was putting on around three to five pounds a year, which I really didn't like it. I looked at my colleagues — both in science fiction and technology

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<sup>151</sup> [http://www.backyardstuff.com/Outdoor%20Furniture/tiki\\_bar.htm](http://www.backyardstuff.com/Outdoor%20Furniture/tiki_bar.htm).

<sup>152</sup> Non-governmental organisation. <http://en.wikipedia.org/wiki/Ngo>.

circles — and I could see where it was going. So when I read the *New York Times* article<sup>153</sup> about the Atkins Diet<sup>154</sup> I decided to try it.

*RP: It worked?*

**CD:** Very well. I lost 80 pounds in a year. In fact, I still have my drivers licence photo from just before I went on Atkins as proof [he pulls it out of his pocket and holds it out]. As you can see, I was a big guy then, around 248 pounds. I'm down to 175 pounds now, which isn't bad for someone who is about 5 foot 10. So it was sort of "Wow, my weight is under control." It was really good to go through that.

*RP: And that gave you confidence to give up smoking?*

**CD:** Exactly. One of the things I had always feared whenever I thought about giving up fags was that I would gain weight. So I thought: "I know how to control my weight now; so the next thing is to give up smoking."

*RP: How did you do that?*

**CD:** My hypnotherapist pointed out that to give up smoking when you are in your early 30s you need a better reason than the health benefits — because knowing that you won't die in 40 years wouldn't sustain you.

So I thought about it and I realised that what I hate more than anything else is junk science. I also realised that it was tobacco companies that invented junk science. In fact, it's kind of funny to go and watch those old ads in which tobacco companies had hired sort of Vichy<sup>155</sup> doctors to talk about how good smoking is for you. I love the idea of those doctors selling out their profession, and their oath, to lie to the public.

Anyway, I concluded that every piece of scientific charlatanism — including creationism, whether abortion is a human life, intelligent design, and of course DRM — can trace its roots back to the tactics invented by companies whose sole mission in life it was to kill me! And that's what worked for me.

*RP: Wonderful. You put tobacco companies in the same box in your head as all the other things you associate with junk science — including DRM — and that gave you the strength to give up smoking?*

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<sup>153</sup> *What if It's All Been a Big Fat Lie?*, Gary Taubes, July 7<sup>th</sup> 2002, New York Times.

<http://query.nytimes.com/gst/abstract.html?res=F00E13F7345A0C748CDDAE0894DA404482>

<sup>154</sup> The Atkins diet is a low-carbohydrate diet, a food diet program for weight loss and dietary health that advocates restricted carbohydrate consumption, based on research that ties carbohydrate consumption with increased blood insulin levels, and increased insulin with obesity. [http://en.wikipedia.org/wiki/Atkins\\_diet](http://en.wikipedia.org/wiki/Atkins_diet).

<sup>155</sup> Vichy France, or the Vichy regime was the de facto French government of 1940-1944 during the Nazi Germany occupation of World War II. While officially neutral in the war, the Vichy regime was essentially a Nazi puppet state that collaborated with the Nazis, including on the Nazis' racial policies.

[http://en.wikipedia.org/wiki/Vichy\\_France](http://en.wikipedia.org/wiki/Vichy_France)

**CD:** Right. By thinking about it like that I managed to get off the fags. What I also concluded, by the way, is that the stuff that is really hard to stop is all in your head. You can stop it almost without noticing.

In fact, everything is in your head: whether or not you feel pain; whether or not you allow things in life to trouble you; whether or not you allow yourself to be depressed; or whether or not you allow yourself to be beaten down by circumstances. I know people who are very happy and have very little; and I know people who are very unhappy and have a lot. It really all comes down to your outlook.

***RP:** That sounds like a great philosophy. Let's end on that note!*

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