

BARE CODE: NET ART AND THE FREE SOFTWARE MOVEMENT

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- + In September 1999, the GNU/Linux operating system was awarded a prize by the jury of the art and technology festival Ars Electronica. This award - for the '.net' category - converted a computer operating system, developed through open collaboration, into an artwork. Setting aside the question of the jury's Duchampian gesture of nominating a tool of production as a work of art, the event could be said to signal the popularisation of the analogy, now frequently drawn, between avant-garde art practice and free software production. This analogy insists upon the recognition that the activities of making art and software are both defined by the necessarily collective nature of creative and intellectual production.

On the one hand, the individual genius is recognised as eclipsing the dialogic nature of cultural production behind the emblem of personal style or innovation, which in turn casts the nonartist as creatively defunct. On the other, closed or proprietary models of commercial software production can be said to ring-fence innovation by unfairly claiming individual or corporate authorship of the latest spin-off of a radically collective history of software production in the computer sciences. Copyrighting and closing the source code of a piece of software also artificially narrows its potential future adaptations and condemns it to the stifling monotony of a fixed identity (product), altered only by the strictly controlled modifications that will lead to its release as an upgrade: the illusion of innovation and difference in a regime of unwavering homogeneity.

The rigid controls imposed by intellectual property rights - dependent on the demonstrable origination and hence ownership of ideas - bury the 'code' (artistic or technical) away from the scrutiny of potential collaborators and 'defends' against the fecund chaos of uncontrolled invention. Whereas the coders slaving away at Microsoft are cut off and largely motivated by economic remuneration, the enthusiasts working in the free software community enjoy the benefits of the potlatch or gift economy where 'given enough eyeballs, all bugs are shallow' (Raymond 1999). Likewise, where the artist locked into life on the gallery circuit is condemned to the permutation of a signature style that resembles the assembly-line production of software upgrades, the plagiarist artist, released from the burden of individual identity, surfs the riotous waves of ownerless creation into the unknown.

So the comparison between avant-garde art and free software does more than point out the collective nature of cultural production; it also points to the revolutionary effects this realisation may have when the consumer and the producer become indistinguishable. This same dream of indistinctness also underpins the avant-garde wish to dissolve art into life or, better, to realise art as a practice of life. The division of (artistic) labour - the enemy of such indistinctness - is a crucial starting point for avant-garde engagement when conceptualising a revolution in culture or beyond. To transpose a Marxist analysis of the means and relations of production onto culture: the individual artist has sometimes been compared to the capitalist who harnesses and thus alienates proletarian labour power into surplus value that can, as accumulated product or 'oeuvre', be used to perpetuate the exploitation of the many by the few. The genius-artist, true to the 'winner takes all' model of capitalism, is able to obscure the heteronomy of culture's production behind the singular expression or possession of a sovereign intellect and imagination. A radical realisation of art, then, would be the deposition of the sovereign producer and a return of the shared wealth of creativity to its true owners: the multitude. For this reason, a reappropriation and transformation of the artistic means of production comes to the fore - an opening up of cultural source codes to an undetermined end.

An early articulation of this idea, and one that used the same language of political economy, was the German writer and philosopher Walter Benjamin's 1934 speech to the Institute for the Study of Fascism, titled 'The Author as Producer' (1992). Combating the contemporary consensus among leftist thinkers that the work of art should express the correct political 'tendency' in its content, Benjamin argued that the revolutionary author should move beyond the limited concern with the product to effect the transformation of the 'apparatus of production'. In order for the writer's work to have an 'organising function', he insisted, 'it is also necessary for the writer to have a teacher's attitude. And today this more than ever is an essential demand. A writer who does not teach other writers teaches nobody. The crucial point, therefore, is that a writer's production must have the character of a model: it must be able to instruct other writers in their production and, secondly, it must be able to place an improved apparatus at their disposal. The apparatus will be the better the more consumers it brings in contact with the production process - in short, the more readers or spectators it turns into collaborators.' (1992: 484)

Although to the contemporary reader the notion of culture's didactic function might seem overly doctrinaire, the insight into the cultural product as a tool or apparatus that invites a collaborative appropriation and transformation seems remarkably modern. Where, in the case of writing, the apparatus and the product are indistinguishable - or only distinguishable as discrete functions of the continuous fabric of language - in the case of digital culture and, specifically for our purposes here, net art, the software that is used to produce the artwork is not similarly continuous or transparent. Using proprietary software for the production of an artwork when its source code is closed means either that the model character of the work must be understood as functioning otherwise or not at all. Or, alternatively, this idea can be formulated as the more open question: What is the model character of net art? If, as is largely the case, net artists use proprietary software to produce their work, to what extent can they be said to be transforming the apparatus of production?

Plagiarism is for Life

Sticking with the generality that most net artists do not, in fact, produce their own software or even rescript existing free software in order to build their projects, it is important to note that net artists do, however, converge with the Benjaminian concept of ‘author as producer’ in some crucial respects. For one thing, the centrality of plagiarism or intellectual property ‘theft’ in this area of art production points not only toward the destruction of the proprietorial role of artist-as-genius and hence a collaborative model of practice, but also to a related principle of recycling, repurposing, or relocating ready-made cultural artifacts or ‘data objects’ in order to release new potentialities and meanings. The transformation of the apparatus of production might therefore be understood as entailing a shift in consciousness that reveals the act of noninvention or relocation as transformative. Suddenly, with this bricoleur’s perspective, the (virtual) world presents itself as one big production landscape, a massive building site heaped with raw materials, a self-replenishing machine of articulation, inflection, and affect. In his piece *Own, Be Owned or Remain Invisible* (1998), for instance, Heath Bunting took an article written about him in the Telegraph newspaper and hyperlinked nearly every word of it to a URL composed of the same word attached to the suffix ‘.com’. Accordingly, the sentence ‘The potential for different possibilities is being diminished by money’ becomes a sequence of URLs: ‘www.the.com; www.potential.com; www.for.com, www.different.com; www.possibilities.com’, etc. The following year, the websites of ‘star’ net artists such as Olia Lialina and Jodi were cloned and subtly altered by the net art collective 0100101110101101.org to reveal the inherent relationship between the information environment and (plagiarist) art. It is the cultural plenitude and potentiality that the plagiaristic ‘model character’ of net art reveals that distinguishes it from postmodern appropriation art as exemplified in the 1980s by artists such as Robert Prince or Sherrie Levine. As Stewart Home explains in his book *Neoism, Plagiarism and Praxis*:

‘Plagiarism enriches human language. It is a collective undertaking far removed from the post-modern “theories” of appropriation. Plagiarism implies a sense of history and leads to progressive social transformation. In contrast, the

“appropriations” of post-modern ideologists are individualistic and alienated. Plagiarism is for life, post-modernism is fixated on death.’ (1995: 51)

Extrapolating from Home, we can surmise that postmodernism’s preoccupation with demonstrating the inertia of the signifying chain in a hyperreal world should not be mistaken for an advancement of the social role of art. Postmodern art moves such as appropriation, while concerned to point out the waning affect of images within a spectacular society, do not amount to a call for the radical transformation of those conditions or an attack on the fetish character of the artwork. This observation is confirmed by the paradoxical fact that artists are able to convert the programmatic neutering of images into a token of artistic insight and originality. In brutal terms, the possibility of creativity per se is shown to have perished in a strategy that aids the survival of the artist. Given the indebtedness of anonymous, plagiarist, and multiple-name-using art collectives such as 0100101110101101.org to the post-Fluxus antics of Mail Art, it is no coincidence to find that mail artist Tony Lowes was able to preempt this Faustian postmodern pact in his manifesto ‘Give Up Art/Save the Starving’:

‘Fictions occupy our minds and art has become a product because we believe ourselves and our world to be impervious to fundamental change. So we escape into art. It is our ability to transform this world, to control our consciousness, that withers on the vine.’ (1991: 77)

The postmodern refusal of originality resides closer to its supposed antithesis - the idea of artistic originality and the cultural calcification that this implies - than net plagiarism with its desire to mutate and transform preexisting, nonoriginal forms and ideas and release creativity from the shackles of ownership.

Immaterial Abundance and Artificial Scarcity

Extending the discussion of the production apparatus and its transformation beyond cultural discourse for a moment, it is essential to mention that the copying and ‘copyability’ of information are both inherent to the functioning of computers. The computer’s operation comprises three core information

activities: the storage, transmission and processing of data, each of which requires that information be copied. Whenever a software program is opened, for example, the version stored on the hard drive must be copied to the random access memory, or whenever a site is browsed on the Web, what we actually view is a copy of the files on the server made by the browser. Furthermore, every copy that is made is indistinguishable from its 'original' and serves equally well as the model with which to make further copies - as a result, the whole notion of the original becomes materially obsolete. The ease of digital reproduction is also such that making a thousand copies is no more demanding than making one. This pushes the marginal costs of production down to practically zero and demands an entire reformulation of surplus value within the information economy. Net artists' focus on plagiarism and nonoriginal production is therefore not only intrinsically a part of the processual logic of the net, but relates also to a drastic transformation of the production landscape in general as it learns to substitute an economics based on immaterial abundance for one based on material scarcity.

As the highest stakeholders in the economy manoeuvre to artificially impose scarcity onto the natural abundance of digital information and its innate replicability, the struggle for information's 'freedom' has begun in earnest. In this struggle, the free software movement has played a core role in popularising the ethic of nonproprietary software in a climate of rabid intellectual property registration. The free software movement was initiated by the Free Software Foundation (FSF), whose founder, Richard Stallman, saw the damage being inflicted on the programming community in the early 1980s by the privatisation of software. He recalls working at MIT's Artificial Intelligence Lab in the 1970s, when sharing software was considered a fundamental part of the process:

'We didn't call our software "free software" because that term did not yet exist; but that's what it was. Whenever people from another university or a company wanted to port and use a program, we gladly let them. If you saw someone using an unfamiliar and interesting program, you could always ask to see the source code, so that you could read it, change it, or cannibalise parts of it to make a new

program.’ (Stallman 1999)

By the 1980s, however, all this was beginning to change. As commercial companies were set up to produce software, the ‘hackers’ at MIT were gradually poached away and their collective expertise converted into privately owned chunks of code. Programmers started to see this as an ‘acceptable paradigm’, not realising that the programming community and culture - not to mention the standard and innovation rate of code - were falling into decline. For Stallman, the issue is not so much that Microsoft has subsequently become the biggest owner of proprietary software and therefore the greatest ‘subjugator’ of users to its laws; it is the paradigm per se that worries him. ‘I don’t want to have a master. I’m not willing to accept the chains, no matter who is holding them’, he has insisted.

To combat the rise of the master-slave relation in computing, the FSF started work on the entirely free GNU/Linux operating system, which spawned many other free software initiatives and products. The FSF’s other radical innovation was the General Public License, which enshrines the principle of ‘copyleft’ - the right to freely use, modify, and distribute software - ironically enough, by using copyright law. A classic act of detournement. It is on this latter issue of copyleft that the free software movement differs significantly from the ‘open source’ movement with which it is often confused. The term open source, coined by Eric S. Raymond in 1998, defines only a piece of software whose source code has been left open. It does not, however, stipulate that this source code can thereafter be copied, adapted, and distributed by anyone at all. In many cases, open source describes a proprietary software, such as Netscape Navigator, whose source code can be viewed but not reused, modified, or distributed. For this reason, when in the wrong hands, what open source achieves is the deployment of the ‘enough eyeballs’ principle for private ends. In the worst cases, it means that the user community is solicited to scrutinise the existing source code, detect bugs or improvements, and then advise the software company on how best to perfect its software. Here we have an example of the commonplace commercial tendency to

disingenuously invoke community (the good old days at MIT and the fraternity of coding) in order then to convert free labour, or what Antonio Negri and Michael Hardt have recently called 'affective labour', into private gain.

Bios and Backlash

Avant-garde net art does not limit itself to a critique of the artwork's autonomy, but extends its critical activity beyond art-internal discourses to address precisely this condition that Negri and Hardt, after Michel Foucault, call 'biopolitical production' in their recent book *Empire* (2000). This could be summarised as the general subsumption of the social bios - entailing the free contagion of ideas, the compulsive flow of communication, the affectiveness of bodies, the inventiveness of communities - by capital. Negri and Hardt pick up and extend Foucault's observation that 'life has become... an object of power', by which is meant that there is now a power struggle over the production and reproduction of life itself. Biopolitical production is understood as the mode of production and power that accompanies a historical shift from the 'disciplinary society' to the 'society of control'. Where the disciplinary society controlled and fixed bodies within institutions such as factories, schools, hospitals, or asylums and used 'closed, geometrical, and quantitative logics', the society of control is 'open, qualitative, and affective'. The disciplinary society can be described as working to contain subjects, while the society of control centres on the production of subjectivities. In other words, where once there was an outside to the factory, an edge to the spaces of discipline, now, in the information age, the behaviour of the individual is continuously tracked and aggregated (or at least potentially) so that our entire existence becomes entwined with production. One has only to think of advertising slogans such as British Telecom's 'It's good to talk' or its 'helping people make connections' to get a sense of this. The phone company no longer represents itself as the mere provider of a communications infrastructure, but as a potent social agent conjuring community out of the alienation of modern life. 'Talking' is no longer something we do, and always have done, but something that British Telecom helps us to do, even reminds us we should do!

The net artist Rachel Baker's 1997 project *TM Clubcard* is a riposte to corporations' biopolitical masquerade as community builders - in this case the UK supermarket Tesco's attempted disguise of a consumer profiling system behind the form of a social 'club', for which the 'Clubcard' acted as both membership card and tagging device. In an article written by Baker on this project, she singles out this insidious aspect of the scheme, which her own 'disloyalty cards' address:

'..the Clubcard encourages the idea that customers are joining a "club". However, the members of this club exist in separate datafields and remain, to all intents and purposes, alienated from each other. The "club" only defines a relationship between the individual Clubcard holder and Tesco superstore, with little contact encouraged between other members. Some club!' (1997)

For this project, Baker applied the 'earn points as you shop' system to surfing. Encouraging a number of 'partisan' websites to display the pirated Tesco Clubcard logo, Baker then assigned an immediate personal identification number, derived from real Clubcards 'acquired' from Tesco stores, to anyone who clicked on the logo and filled out a questionnaire. These cards were later mailed to the subscriber. Every time subscribers visited one of the sites in the TM Clubcard catalogue, they were then rewarded with loyalty points, but the points no longer related to a money-off reward. Instead, using the database of email addresses collected through the questionnaire, Baker would send 'erroneous junk mail' to the card holders. This included communications addressed to other people or a printout of the database's own faulty program. Baker explains:

'This strategy ensures that recipients know that they are on a database, that it is dysfunctional, and, more importantly, that there are other members of the club with whom potential contact is possible.'

Out of 'the machinery of a monstrous incorporated presence' Baker seeks to build a truly sociable club (1997).

Tesco quickly spotted the project, however, and tracked down its author via a search made with the InterNIC domain name registrar, which provided Tesco with the address of Irrational Gallery Limited (the organisation name used by

Rachel Baker and fellow net artist Heath Bunting to register the Irational.org domain). On April 21, 1997, Irational.org received a letter from Tesco's solicitors Willoughby & Partners accusing them of copyright and trademark infringement as well as the more serious crime of passing off, which referred to Baker's use of the Tesco brand identity to extract personal data from web users. As a result of Tesco's threat of civil action, rather than simply taking down the site as the Tesco lawyers had demanded or transferring the site to another domain hosted by a foreign server, Baker decided to switch the branding to that of the Sainsbury's supermarket chain. This was largely due to the fact that the site was dependent on the various catalogue sites and was consequently not a discrete, easily transferable data object. At this point Baker foresaw what the project would indeed become: 'The project's trajectory could be a series of solicitors letters each telling a story of a different loyalty card hijack and trademark transference' (1997). Today, the site no longer functions as originally intended but is instead a collection of disassembled components serving as a record of the project, its participants, some of the data collected, and the legal correspondence generated by it.

This project is interesting because it attacks the corporate production of a controlled community using its own tools. Hacking the supermarkets' own branding and data-collection system, the project attempts to fabricate a true community of interest off the back of the dysfunctional 'loyalty club'. This relates back to the free software movement in the sense that the artistic 'coder' modifies the source code of a piece of corporate 'software' to a different end. Rather than building the artwork from scratch, Baker plagiarises the work already done by supermarket chains to liberate a new potential hidden within it. TM Clubcard also participates in the spirit of free software in the sense that it combats the extension of proprietary rights over what was formerly freely available in the public domain or outside the scope of corporate interest: in this case, the contingent decisions of shoppers or common phrases (such as 'Baker's finest', which she lifted from the store's bakery section) that Tesco has protected as part of its brand identity. Of course, where this differs markedly from the free

software movement is the illegality of Baker's activity. Where the free software movement can rewrite software from scratch rather than ripping off preexisting pieces of code and thus coexist with the commercial software industry, the force of Baker's work depends on the creative hacking of social, technical, and corporate systems. This reveals that the question of original invention is one of the limits to the analogy between the free software movement and net art. Where it is possible to write code entirely from scratch (albeit collectively and notwithstanding the possibility of its infinite reuse thereafter), the whole ethos surrounding plagiaristic net art prohibits any return to a notional ground zero. It is not possible to totally rescript the 'society of control', and the dialectic between art and life is such that it cannot merely coexist alongside the status quo as an alternative system.

Having characterised the free software movement as capable of producing a discrete stratum of software that can coexist with proprietary software, it must, however, be stressed that this harmonious relation pertains only to the legal status of the code. In other words, free software may not infringe copyright laws by plagiarising proprietary code, but it certainly poses a threat to big business by promising to incite a mass consumer flight away from commercially created products to nonproprietary ones. An insight into the potential scale of this flight was given when, in 1998, the Mexican government announced its decision to install the GNU/Linux operating system in 140,000 elementary and middle-school computer labs nationwide. The decision (subsequently rejected on the grounds that people did not possess the necessary user skills), was made primarily on economic grounds, since Mexico simply could not afford to pay for all the licenses on proprietary software. Extrapolating from the example of Mexico to the rest of the developing world, it seems reasonable to speculate that this huge emerging market might truly be persuaded by the economic and cultural wisdom of using free software. Speculating yet further, but not beyond the bounds of reason, it is possible to see how the free software community of coders will spread far outside the western world to include the emerging coders of the developing world. The open protocols (http) upon which the World Wide

Web itself operates, and which the numerous commercial and proprietary operations that depend on it take for granted, might yet be instrumental in helping to connect up the software industry's nemesis: a world wide web of free software users and producers. Here it is hard not to be struck by the fit between Benjamin's idea of the revolutionary potential of the self-transforming production apparatus and the history of networked computing. It is also this potentiality inherent in the communicative nature of biopolitical production or biopower that Negri and Hardt identify in their book *Empire* and that forms the grounds for their unflagging optimism: 'The immediately social dimension of the exploitation of living immaterial labour', they argue, 'immerses labour in all the relational elements that define the social but also at the same time activates the critical elements that develop the potential of insubordination and revolt through the entire set of labouring practices.' (2000: 29)

Bare Code

I/O/D's *Web Stalker* (1998) is one of several 'art browsers' that reconfigure standard interfaces to reveal this selfsame 'potential for insubordination'. The *Web Stalker*'s premise is to break with the 'technical-aesthetic monopoly' of Netscape Navigator and Microsoft Explorer browser software to reveal, on one level, that there is nothing in the HTML code being streamed to a computer that forces an adherence to its design instructions (Fuller 1999: 37). As group theorist Matthew Fuller has put it: 'These instructions are only followed by a device obedient to them'. I/O/D conceives of the HTML stream as a current that could be interpreted by a different kind of software in a way that has nothing to do with its purpose. In practical terms, the *Web Stalker* has six main functions: the Crawler, which actually links to the Web, looks for links inside a URL and logs them; the Map, which takes the HTML stream from the Crawler and represents all HTML documents as circles and all links between them as lines (this map is dynamically linked to the Crawler's constant production of new data which can, in turn, be mapped); the Dismantle function, which gives more detailed information than the Map function; the Stash function, which is a way of saving the user's web use; the Stream function, which demonstrates how the HTML

'feed' from all the sites being explored is mixed together as a single stream; and finally, the Extract function, which strips a document of its text and then displays the text in its own window. When the *Web Stalker* is opened, it turns the entire screen black, and the users then take the cursor and draw a window, repeating this action for every extra function they want to employ. Although the background colour can be altered, its default setting is black, something that Fuller describes as announcing 'a reverse nihilist moment', by which he means that where browsers conventionally screen the network activity out, 'suddenly everything is there'.

Although I/O/D built the *Web Stalker* using the commercial software Macromedia, its effect - of baring the HTML stream and creating an encounter between the user and the normally hidden activity of the net - relates directly to the spirit of free software. The user's normally amnesiac passage through the net is suddenly rendered mappable as past links are displayed, and a galaxy of potential links made evident. Likewise, the blinkering produced by the universal adoption of GUI metaphors is thrown off, and the user is able to gain the sense of the multiple possibilities of which the computer-mediated communications (CMC) environment is actually capable. This realisation could be an important step toward the Benjaminian ideal of consumers becoming collaborators through the model character of the work. In this respect, an artistic interpretation of the principles of free software entails the exposure of what is ordinarily screened out, the introduction of the raw into the cooked. This, in turn, relates to earlier avant-garde inclusion of previously 'obscene' or unacceptable material whose introduction into the artwork, if only temporarily, sent shockwaves through culture and society as the coordinates of possibility were traumatically redrawn. The cubists' inclusion of real-world materials into the space of the painting, the surrealists' inclusion of the unconscious and its automatic drives into the production and subject of the artwork, and the minimalists' discovery of the actual space of the gallery are just some of the examples that spring to mind. This 'obscene' or excluded material contains within it a double potential. On the one hand, it is the 'bare life' that the biopolitical mode of production fixes upon

and subsumes within itself as the new object of power. On the other hand, it contains within it the potential to explode the workings of power - be this cultural, technological, or political - through a kind of macrosocial act of desublimation that makes it impossible for the repressive social fictions to be sustained.

In the case of 0100101110101101.org's recent work *life_sharing*, the construct of privacy and individual identity is deployed as the point of rupture. Taking its cue from a technique called 'file sharing' - by which computers, usually connected via an ethernet or intranet, can share the files stored on other computer hard drives - 0100101110101101.org opened its computer's entire hard drive up to the net. Although it is necessary to access this computer via the membrane of the browser, the viewer can nonetheless access all the files stored on the artists' hard drive simply by visiting their home page. In a certain sense, this project simply draws attention to how the Internet already functions: When visiting a website, one is in any case downloading a file stored on a server computer's hard drive, which is constantly connected, via a phone line, to the net. *Life_sharing* essentially operates on the same principle except, rather than making only certain files available as HTML documents, all the files are accessible, including its software and the GNU/Linux OS. In a more overtly political sense, the project identifies the attempt to ring-fence and protect information (on the hard drive or the server computer) as both a futile exercise and a fearful capitulation to the myth of individual identity: 'Consider the increasing tendency toward intrusion in the private sphere', the artists proclaim. '0100101110101101.org believes firmly that privacy is a barrier to demolish. *life_sharing* must be considered a proof ad absurdo. The idea of privacy itself is obsolete'. In several ways, then, excess and abjection are summoned up to combat the entrapment of the individual within the individuating microphysics of power. A total data surplus is suggested as a means to combat the paranoia of surveillance systems operated by the state and private enterprise, and the controlling boundaries of the viewable website are ruptured to lay bare the potential for the entire hard drive - and by extension the private sphere - to become viewable from the outside.

To end by returning to where we began, the decision to award the GNU/Linux operating system with the Prix Ars Electronica signals the entry of the free software ethos into the popular imagination, but it should be remembered that this includes the corporate imagination as well. As we have also seen above, biopolitical production is a two-way street and the flow of traffic moves back and forth between strategies of power and counterpower. It might then come as no surprise to discover that, shortly after this ‘radical’ decision, four members of the Ars Electronica jury (Derrick de Kerckhove, Lisa Goldman, Joichi Ito, and Marleen Stikker) apparently published a joint statement announcing that the decision had been rigged, or at the very least steered, by some of the big commercial sponsors of the festival: Siemens, Microsoft, Oracle, and Hewlett-Packard:

‘From reliable sources’, they announced, ‘we also learned that the decision was made weeks before the “.net” jury decision on linux. [We are going public because] we have also just learned that the above-mentioned IT-companies are involved in a linux distribution joint venture and a strategic alliance. Their joint venture startup will most probably become one of the leading linux distributors, directly attacking Red Hat and SUSE. This is the classic oligopolistic strategy. They cannot buy linux, nevertheless, they will take control over the distribution of the competitor.’ (1999)

Although this post later turned out to be a fake, the substance of the mail points to the truth of the judges’ decision, or the commercial logic that it reveals: the realisation, touched on above, that what is given freely by communities is seen ever more as the ideal object of power and commodification. Here, however, is where the tactical mode adopted by net artists and other independent media operators starts to show its strengths. Where the logic of capital, despite the shift to biopolitical production, must always seek to derive profit from its investments by extracting a product, the tactician eschews the proper (proper names, fixed identities, defined territories) in the name of the makeshift, precarious, ephemeral, and improvisatory. The free software movement - which is based on the idea of the complete open-endedness of software’s code and the belief

that the chance innovations of open collaboration outstrip the battened-down defensiveness of private R&D - should, in this respect, be considered tactical. The tilt of production toward the biopolitical - subsuming the communicative and affective relations of society - seeks to harness the innovations of everyday tactical activity but, through converting what is in flux into something fixed, continually misses the true possibilities of tactical invention. Net artists, in the best instances, can articulate both the new modes of production defined by CMC and their potential radicalisation. By baring the code - be it social, technological, or aesthetic - that underpins the Internet environment, net artists provide an insight into the potential for anyone to become a producer or to extend the free software ethos to cultural and social production in general. Cooptation always looms, but, as we have seen from the fictitious comments of the four dissenting Ars Electronica judges, this usually hinges on converting the 'obscurity' of what is freely produced or given into the 'properness' of what can be packaged and distributed. Hence, baring the code or revealing the unseemly openness of technical and social operating systems augurs an alternative kind of biopolitical production - one that defies any easy recuperation and sale and that contests the production of subjectivity by means of an open cultural practice.

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