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Media Mutandis: a NODE.London Reader

edited by Marina Vishmidt,
with Mary Anne Francis, Jo Walsh and Lewis Sykes

surveying art, technologies and politics

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• Introduction

The conjuncture of debates around knowledge production, mediation and distribution of cultural activity, information politics and constructions of visibility for a self-positing 'media arts' scene in London was never going to be easy. Generating a discursive and reflective counterpoint to the instantiations of these debates on the ground in the form of events, workshops and symposia is also a task that falls willy nilly, mutatis mutandis, into Beckett's famed note to self: "fail. fail again. fail better".

Conjuring up a media arts field from the nonesuch of contested definitions, values and agendas, as they are imbricated and implicated in structures of legitimation, funding, institutional credibility and critical anatomy is perhaps an endeavour fated to the same kind of dispersion as its object but this needn't pre-emptively curtail the interest of trying. One point of reference that may catalyse the question from the outset is the one of circumscription – what is media arts, where is it, who cares to know. With this bald curiosity, or some might say question-begging, we can start to examine what discursive, social and institutional frameworks anchor presumptively discrete fields, including self-definitions, what sorts of networks produce and are produced by them. So what constitutes media arts in contradistinction to what we talk about when we talk about art in general?

Minding the heterogeneity and contradictions that traverse each field, it's still possible to schematically argue for a contemporary art discourse thatwould call itself the 'proper' artworld, with established organs of criticism, reception, funding, publicity, all the cultural vectors and financial mechanisms that denote a self-, and culturally assumed, understanding of art as verified cultural specialty.**[1]** It could then correspondingly project 'media arts' as a sort of nebulous default structure of everything that partakes of technology in a way that's constitutive of the work but doesn't partake in the same critical and market circuits that operate, and operate through, the proper artworld. Media arts, in its turn, would enact a hypothesis of artistic production that is not fetishistic about its adherence to constructs of 'art' or seeks legitimation as art but is more interested in the creative and social possibilities of new(er) technologies, and even this broad brush is too narrow, unless we give a more historical reading to media arts that embraces video art, intermedia experiments and environments, early software art and even film installation. Media art/s and contemporary art share a tendency to evaluate one another by the terms

[1] For an assessment of the production of contemporary art as a hypostatisation of the circuits of 'publicity' especially, see Jeff Wall's "Dan Graham's *Kammerspiel*" in Alexander Alberro and Blake Stimson, eds., *Conceptual Art: A Critical Anthology*, MIT Press, London and Cambridge, MA, 2000. Also Alexander Alberro, *Conceptual Art and the Politics of Publicity,* MIT Press, London and Cambridge, MA, 2003.

which they would most like to expunge from their own spheres: hence media arts becomes 'techy' and uncritical, an ornamental redoubt of media activism, as contemporary art becomes commercially led, by turns vapid and abstruse. Clearly, there are also crossovers and mutual encounters, but unless media art is canonised within a particular critical or historical inscription of contemporary art, the 'media arts ghetto' is always there, with a defined funding stream and a warm bowl of soup.

This is where NODE.London sees its chink for intervention. If the above is a hyperbolic account of what Saul Albert elsewhere has called the 'many captive or reductive mechanisms and markets' that the collaborative arts practices and media arts 'scenes' of London must negotiate, the NODE.London is an attempt to shift the parameters of the game and make way for certain investigations. Mediation would be one, and is one of the principal reflective paths in this reader. While the critical impasse described in the prior paragraph may result in the production of a recognisable image of media arts, but it is an image that is heavily linked to institutional imperatives and the social policy and financial objectives that shape them. The question of mediation collapses into two neat but not dissociated halves. One half addresses the distinction between art and media arts much as at the distinction of art from the rest of cultural and social production: as a mode of differentiating commodities in the market. It makes a stand for a formulation of media arts as implicated, contradictory, opaque and communicative as the art 'field' is characterised in general, with all the tender and toxic debates for autonomy vs relationality, uselessness vs instrumentality that are still viable when not enlisted in hidebound formalisms. The other half locates the possibilities for displacing current forms of mediation and representation in growing and linking possibilities for self-mediation, both in terms of discourse and infrastructures of collaboration and resource-sharing. As Luci Eyers pointed out in an email exchange, NODE.London's commitment to augmenting these possibilities is building not only on historical and current experiments in self-organisation in London such as Backspace and the University of Openness, but on the structural tendencies of distributed platforms like the internet that net art and software art initially, but now any cultural work that's propagated online, can use to circumvent existing institutional and commercial distribution channels. For NODE.London, eschewing conventional models of specialisation, professionalisation and institutional support in producing an arts event, while still being able to command vast resources from a pool of dedicated Voluntary Organisers (and the networks that they are drawing upon) projects the test principles of self-mediation in practice; although this paradigm does get complicated

by how institutions, funding streams and cultural policy objectives stay in the picture, and much remains to be deduced about the relationship between self-mediation and the contemporary compulsion for/imposition of self-management/self-exploitation.

In any case, this reader is a contingent, incomplete, and, at 300 pages, some might say *too* comprehensive distillation of a critical context around the momentous trial that is NODE.London – as an organisation, sure, but also in the production of the month of media arts events descending on London in March 2006. The reader's programmatic remit doesn't stop there, however, but goes on to retrospectively encompass the intensive week of events centring on the self-provision of communication networks (communication spanning microprocessors to money), wireless technologies and art and the influence of FLOSS (Free/Libre and Open Source Software) methodologies on cultural production – the Open Season of 1-6 October 2005. (see **http://nodel.org/october.php** for audio and video documentation). Open Season provided the original stimulus for this publication and its structure, inspiration and critical co-ordinates very much coalesced out of the discussions that went on over those three events, and the problematics that emerged. I would like to thank Saul Albert, Laura Oldenbourg and Tim Jones, and then: Luci Eyers, Antonio Pena, Jaya Brekkie, Simon Worthington, Raquel Eulate de Perez, Josephine Berry Slater, Anthony Iles, Alessandra Chila, Alessandra Reba, Paola Crespi and Capucine Perrot, the assistant editors and the contributors.

Media Mutandis: a NODE.London Reader is available at NODE.London events throughout March 06. For other outlets and to order this or other versions, please see **http://publication.nodel.org**

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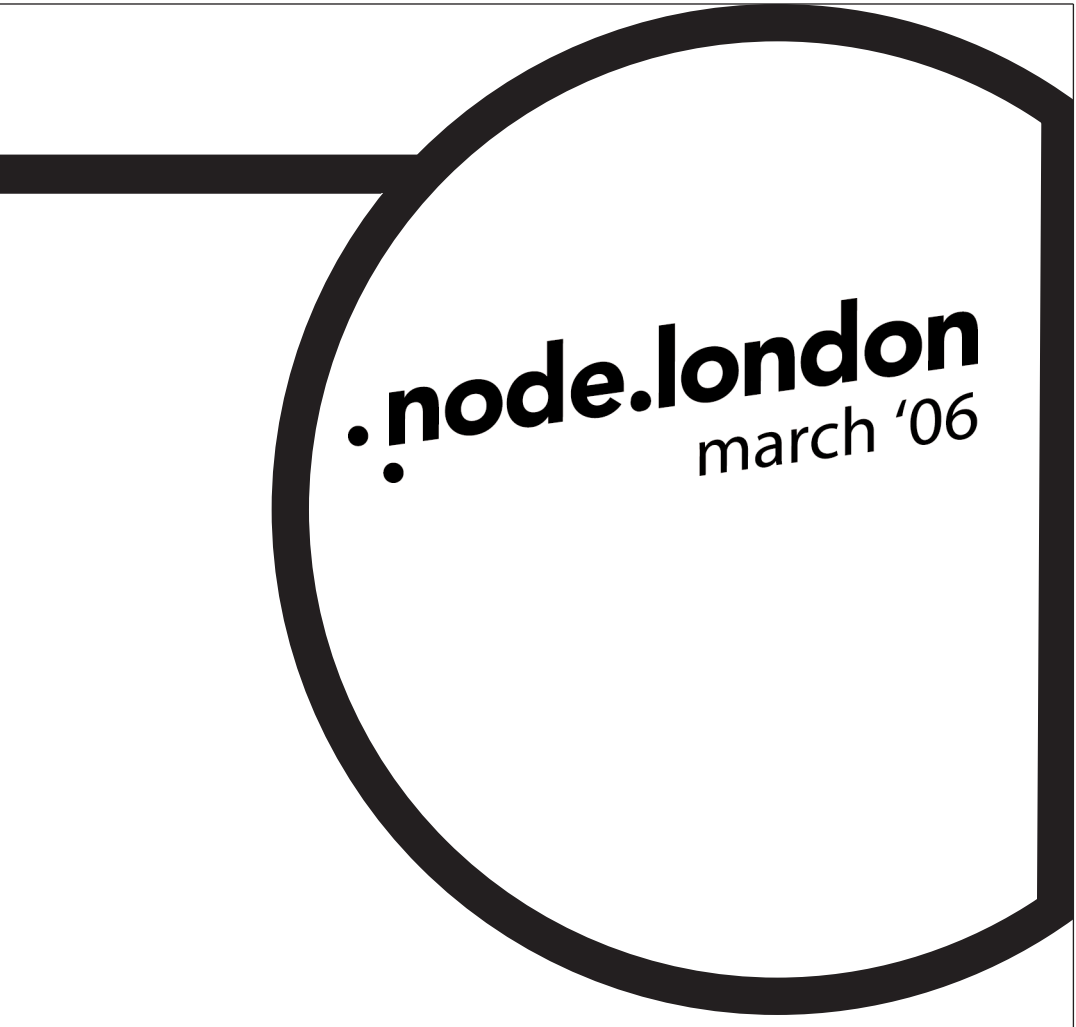
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• Author : Brett Neilson and Ned Rossiter

• From Precarity to Precariousness and Back Again: Labour, Life and Unstable Networks

In Florian Schneider's documentary *Organizing the Unorganizables* (2002), Raj Jayadev of the DE-BUG worker's collective in Silicon Valley identifies the central problem of temporary labour as one of time. Jayadev recounts the story of 'Edward', a staff-writer for the Debug magazine: "My Mondays roll into my Tuesdays, and my Tuesdays roll into my Wednesdays without me knowing it. And I lose track of time and I lose hope with what tomorrow's going to be". Jayadev continues: 'What concerns temp workers the most is not so much a $2 an hour pay raise or safer working conditions. Rather, they want the ability to create, to look forward to something new, and to reclaim the time of life'. How does this desire to create, all too easily associated with artistic production, intersect with the experiences of other workers who engage in precarious forms of labour?

With the transformation of labour practices in advanced capitalist systems under the impact of globalisation and information technologies, there has arisen a proliferation of terms to describe the commonly experienced yet largely undocumented transformations within working life. Creative labour, network labour, cognitive labour, service labour, affective labour, linguistic labour, immaterial labour; these categories often substitute for each other, but in their very multiplication they point to diverse qualities of experience that are not simply reducible to each other. On the one hand these labour practices are the oppressive face of post-Fordist capitalism, yet they also contain potentialities that spring from workers' own refusal of labour and subjective demands for flexibility – demands that in many ways precipitate capital's own accession to interminable restructuring and rescaling, and in so doing condition capital's own techniques and regimes of control.

The complexity of these relationships has amounted to a crisis within modes of organisation based around the paranoid triad: union, state, firm. Time and again, across the past fifteen years, we heard proclamations of the end of the nation-state, its loss of control or subordination to new and more globally extensive forms of sovereignty. Equally, we are now overfamiliar with claims for the decline of trade unions: their weakening before transnational flows of capital, the erosion of salaried labour, or the carefully honed attacks of neoliberal politicians. More recently, the firm itself is not looking so good, riddled with internal instability and corruption for which the names Enron, Worldcom and Parmalat provide only the barest index. Clearly, the "networked organisation" is not the institutional form best suited to the management of labour and life within information economies and networked socialities. But it is not these tendencies themselves as much as their mutual implications that have led to the radical recasting of labour organisation and its concomitant processes of bargaining and arbitration.

Within the ambit of social movements and autonomous political groups, these new forms of labour organisation have been given the name precarity, an inelegant neologism coined by English speakers to translate the French *precarité.* Although the term has been in circulation since the early 1980s, it is really only over the past two or three years that it has acquired prominence in social movement struggles. Particularly in the Western European nations, the notion of precarity has been at the centre of a long season of protests, actions, and discussions, including events such as EuroMayDay 2004 (Milan and Barcelona) and 2005 (in seventeen European cities), Precarity Ping Pong (London, October 2004), the International Meeting of the Precariat (Berlin, January 2005), and Precair Forum (Amsterdam, February 2005).**[1]** According to Milanese activist Alex Foti (2004), precarity is "being unable to plan one's time, being a worker on call where your life and time is determined by external forces". The term refers to all possible shapes of unsure, not guaranteed, flexible exploitation: from illegalised, seasonal and temporary employment to homework, flex- and temp-work to subcontractors, freelancers or so-called self-employed persons. But its reference also extends beyond the world of work to encompass other aspects of intersubjective life, including housing, debt, and the ability to build affective social relations.

Classically, the story told about precarity is that it was capital's response to the rejection of "jobs for life" and demands for free time and flexibility by workers in the 1970s. Thus the opposite of precarity is not regular work, stable housing, and so on. Rather, such material security is another version of precarity, consuming time, energy, and affective relations as well as producing the anxiety that results from the 'financialisation of daily life' – to steal a felicitous phrase from Randy Martin (2002). Among other things, the notion of precarity has provided a rallying call and connecting device for struggles surrounding citizenship, labour rights, the social wage and migration. And importantly, these struggles are imagined to require new methods of creative-social organisation that do not make recourse to social state models, trade union solidarities or Fordist economic structures.

The political challenge is to determine whether the uncertain, unpredictable condition of precarity can operate as an empirical object of thought and practice. Precarity would seem to cancel out the possibility of such an undertaking, since the empirical object is presupposed as stable and contained, whereas, the boundaries between labour, action, and intellect

[1] Over the past year there has been a proliferation of magazines, journals and mailing lists exploring the theme of precarity and the associated problematic of labour organisation. These include *Greenpepper, Mute, Multitudes, republicart, ephemera, European Journal of Higher Arts Education*, Derive Approdi, and aut-op-sy.

appear increasingly indistinct within a post-Fordist mode of production. Can common resources (political organisation) be found within individual and collective experiences of permanent insecurity? Furthermore, is there a relationship between the potential for political organisation and the technics of communication facilitated by digital technologies? In sum, what promise does precarity offer as a strategy and why has it emerged at this precise historical moment as a key concept for political thought and struggle?

In order to address these questions, we first outline the distinction between "precarity" and "precariousness". In surveying the various ways in which these terms have circulated, we wish to establish a framework within which questions of labour, life and social-political organisation can be understood. The various uncertainties defining contemporary life are carried over – and, we argue, internal to – the logic of informatisation. Our aim, however, is not to collapse respective differences into a totalising logic that provides a definitive assessment or system of analysis; rather, we seek to identify some of the forces, rhythms, discourses and actions that render notions such as creativity, innovation and organisation, along with the operation of capital, with a complexity whose material effects are locally situated within transversal networks. Where there are instances of inter-connection between, say, the work of migrants packaging computer parts or cleaning offices and that of media labour in a call centre, software development firm or digital post-production for a film studio, we see a common expressive capacity predicated on the dual conditions of exploitation and uncertainty.

Yet to cast the experience of informational labour as exclusively oppressive is to overlook the myriad ways in which new socialities emerge with the potential to create political relations that force an adjustment in the practices of capital. Such collectivities are radically different from earlier forms of political organisation, most notably those of the union and political party. Instead, we find the logic of the network unleashed, manifesting as situated interventions whose effects traverse a combination of spatial scales. The passage from precarity to precariousness foregrounds the importance of relations. It makes sense, then, to also consider the operation of networks, which above all else are socio-technical systems made possible by the contingency of relations.

Uncertainty, Flexibility, Transformation

To begin to grapple with the sort of questions sketched above it is necessary to acknowledge that the concept of precarity is constitutively doubled-edged. On the one hand, it describes an increasing change of previously guaranteed permanent employment conditions into mainly worse paid,

uncertain jobs. In this sense, precarity leads to an interminable lack of certainty, the condition of being unable to predict one's fate or having some degree of stability on which to construct a life. On the other hand, precarity supplies the precondition for new forms of creative organisation that seek to accept and exploit the flexibility inherent in networked modes of sociality and production. That the figure of the creative, cognitive or new media worker has emerged as the figure of the precarious worker *par excellence* is symptomatic of this ambivalent political positioning. Some commentators have gone as far as to suggest that the collaborative processes and affective relations that characterise artistic work reveal the inner dynamics of the post-Fordist economy. By questioning the boundaries between social labour and creative practice, for instance, Brian Holmes (2004) follows one of the central themes of Italian *post-operaista* thought, arguing that creative linguistic relation (the very stuff of human intersubjectivity) has become central to contemporary labour regimes.

No doubt there is some truth to the claim that the dynamic relationship between material production and social reproduction converges, under contemporary capitalism, on the horizon of language and communication. This argument, as developed in the work of thinkers like Christian Marazzi (1999) and Paolo Virno (2004a, 2004b), has been redeployed in any number of contexts to question the boundaries between creative action and social labour. It would be foolish to underestimate the utility of these interventions. But implicit in this tendency to collapse otherwise disparate forms of labour into the containing category of creativity is an eclipse of those forms of bodily, coerced and unpaid work primarily associated with migrants and women (and not with artists, computer workers or new media labourers).

In this sense, it is probably not a good thing that precarity has become the meme of the moment. Proclamations of the epoch-breaking character of contemporary labour market transformations, while doubtless augmenting the rhetorical force of the struggles surrounding precarity, inevitably occlude two important facts. First, the current increase of precarious work in the wealthy countries is only a small slice of capitalist history. If the perspective is widened, both geographically and historically, precarity becomes the norm (and not some exception posed against a Keynesian or Fordist ideal of capitalist stability). With this shift in perspective the focus also moves to other forms of work, still contained within the logic of industrial or agricultural production, that do not necessarily abide the no-material-product logic of so-called cognitive, immaterial or creative labour. Without denying that neoliberal globalisation and the boom-bust dot.com cycle of information technology have placed new pressures on labour

markets in the wealthy countries, it is also important to approach this wider global perspective in light of a second fact: that capital too is precarious, given to crises, risk and uncertainty.

Labour, Communication, Movement

Importantly, capital has always tried to shore up its own precariousness through the control of labour and, in particular, the mobility of labour. It is the insight of Moulier-Boutang's *De l'esclavage au salariat* (1998) to identify the subjective practice of labour mobility as the connecting thread in the history of capitalism. Far from being archaisms or transitory adjustments destined to be wiped out by modernisation, Moulier-Boutang contends that labour regimes such as slavery and indenture are constituent of capitalist development and arise precisely from the attempt to control or limit the worker's flight. In this perspective, the figure of the undocumented migrant becomes the exemplary precarious worker since, in the current global formation, the entire system of border control and detention technology provides the principal means by which capital controls the mobility of labour. Because the depreciation and precarisation of migrant labour threatens to engulf the workforce as a whole (and because the subjective mobility and resistance of migrants tests the limits of capitalist control), their position becomes the social anticipation of a political option to struggle against the general development of labour and life in the contemporary world (Mezzadra, 2001; Mezzadra, 2004).

A similar argument can be made regarding the un- or under-paid labour of women, both with regard to the status of the patriarchal family as the locus of the reproduction of labour power in capitalist societies and the preponderance of women in precarious sectors such as care-work, house-work, or call centres (Hardt and Negri, 2000: 292-293, 2004: 110-111; Huws, 2003). Indeed, the Madrid-based group Precarias a Deriva, which has always resisted the temptation to use the term precarity as a common name for diverse and singular labour situations, has devoted much of its research to the feminisation of precarious work. And the sheer proliferation of women in contemporary labour migration flows means that there is a great deal of convergence between approaches that emphasise the role of border technologies in capital's attempts to minimise its precariousness and those that focus on the ongoing marginalisation and undervaluation of women's work (Anderson, 2000; Gill, 2002; Hondagneu-Sotelo, 2001; Parrenãs, 2001; Huws, 2003).

The point is not to replace the figure of the creative worker with that of the migrant or female care-worker in the discussions and actions surrounding precarity. Nor is it to collapse these various types of labour practice into a

composite category, such as the much circulated term *precariat* (which combines the words *precario* and *proletariat* in a single class category). Equally, it is insufficient to subordinate these very different labour practices to a single logic of production (which is the tactic followed by Hardt and Negri when they argue that all forms of labour in the contemporary world, while maintaining their specificity, are transformed and mastered by processes of informatisation). In terms of political practice and strategy, we believe there is something to be gained by holding these labour practices in some degree of conceptual and material separation but articulating them in struggle.

For instance, the fight for open architectures of electronic communication pursued by many creative workers cannot be equated with the subjective practices of mobility pursued by undocumented labour migrants. While these actions might be conjoined on some conceptual horizon (through notions such as exodus or flow), they have distinct (and always highly contextual) manifestations on the ground. There are clearly important differences between copyright regimes and border control technologies, even if both are ultimately held down by the assertion of sovereign power, whether at the national or transnational level. Recognising this, however, does not mean that the struggles surrounding free software and the "no-border" struggles surrounding undocumented migration cannot work in tandem or draw on each other tactically. As the editorial team of *Makeworld Paper#3* writes: "the demand to combine the freedom of movement with the freedom of communication is social dynamite" (Bove et al., 2003).

Precarity, then, does not have its model worker. Neither artist nor migrant, nor hacker nor housewife, there is no precarious Stakhanov. Rather, precarity strays across any number of labour practices, rendering their relations precisely precarious – which, is to say, given to no essential connection but perpetually open to temporary and contingent relations. In this sense, precarity is something more than a position in the labour market, since it traverses a spectrum of labour markets and positions within them. Moreover, the at best fleeting connections, alliances and affiliations between otherwise distinct social groupings brings into question much of the current debate around the 'multitudes' as somehow constituting a movement of movements. Such a proposition implies a degree of co-ordination and organisation that rarely coalesces at an empirical level beyond the time of the event.

Instances where such affilations have occurred – such as the much mythologised "Battle of Seattle" and subsequent WTO protests – have not, at the end of the day, amounted to any sustained alternative force. The high moment of 2003, which saw a global mobilisation of protestors against the Iraq War,

has become lost in the spectral debris of an informatised society. The massive anti-war protests of 15 February 2003 proved impossible to match. And this loss of momentum prompted the recourse to depoliticising debates, such as the perennial toss-up between violence and non-violence in protest and disobedience. While the World Social Forum (WSF) events in Porto Alegre and Mumbai, the European Social Forum (ESF) and, more recently, the participation of civil society in the World Summit on the Information Society (WSIS), have acquired a degree of momentum, it would be a mistake to view such activity in terms of some kind of coherent project of opposition or refusal. Arguably, the new discursive legitimacy obtained by civil society within supranational institutions associated with WSIS is conditioned by the increasing need amongst neoliberal governments for NGOs and social justice organisations to fulfill the role of service provision in the wake of a decimated state system (Rossiter, 2005).**[2]**

There is little chance, then, that a coherent political opposition will emerge from the organised activities of civil society. Rather, what we see here is a further consolidation of capital. More disconcerting is the likelihood of civil society organisations becoming increasingly decoupled from their material constitution – that is, the continual formation and reformation of social forces from which they were born. This is a predicament faced by activist movements undergoing a scalar transformation. The system of modern sovereignty, which functioned around the dual axiom of representation and rights, cannot encompass these new modes of organisation. Nor can the postliberal model of governance, which rearranges vertical relations into a horizontal order of differentiated subjectivities. Nonetheless, the problem of scale remains. In the case of social movements that begin to engage with what passes for global civil society, this can entail an abstraction of material constitution that is often difficult to separate from the histories and practices of abstract sociality vis-à-vis capitalism. Such a condition begins to explain why there is a tendency to collapse the vastly different situations of workers into the catch-all categories of the multitudes and precarity. This, if you will, is the logic of the empty signifier. And here lies the challenge, and difficulty, of articulating new forms of social-political organisation in ways that remain receptive to local circumstances that are bound to the international division of labour.

Paradoxically, the increased institutional visibility that attends the action of speech – as seen, for example, by civil society actors participating at WSIS – compounds the invisibility of material constitution. This is why radical

[2] These issues were among many debated at the recent *incommunicado.05: information technology for everybody else* conference held in Amsterdam, 16-17 June 2005, **http://incommunicado.info/conference**. See also Incommunicado mailing list archive.

political movements must face the question of institutions – a question that brings to the fore fundamental issues surrounding the subject of security, both from the political and anthropological points of view. With shifts in the level of scalar organisation, pressures come to bear upon the primary organisers or advocates of social movements from participants and other actors who demand forms of accountability and transparency. Networks cannot hope to entirely transcend this relation. Even those movements that bring precarity to the fore risk disconnecting from the subject that conditioned their emergence. Thus while networks can be understood as non-representational modes of organising political and social relations, they are nonetheless bound to prevailing discourses and expectations surrounding notions of networked governance. These kinds of tensions may operate as a generative force, resulting in the development of protocols and modes of engagement that enhance the capacities of the network, but they can also result in dysfunctionality and eventual breakdown.

Crucial to understanding the turn to precarity in nongovernmental politics is to situate it historically in relation to the anti-war protests and the difficulty in maintaining their momentum as the U.S. led invasion of Iraq unfolded. For many who had protested for the first time (or for the first time in many years) in 2003, the failure of the anti-war actions to stop the invasion of Iraq was a severe object lesson, a harsh warning about the limits of political expression. Doubtless there were tactical errors and, in many contexts, the anti-war movement swelled its ranks by appealing to nationalist sentiments that immediately modulated into support for the troops once the hostilities began. This led to difficulties of organisation and mobilisation that severely tested the upbeat and progressive logic of expansion and multiplication that many had applied to the movement from the time of Seattle. At the same time, there was an increased awareness of security in the post-911 environment with heightened rhetoric about terrorism in the mainstream media, images of detainees bound and gagged in Guantanamo and the first news of the kidnappings and beheadings in Iraq. As many have argued, a pervasive politics of fear settled over the advanced capitalist nations, somewhat independently of whether they deployed troops in Iraq or not. Is it any accident that the concern with precarity and the increased instability of labour came to the fore in this situation of perceived insecurity?

We suggest the emergence of precarity as a central political motif of the global movement relates not only to labour market conditions but also to the prevalent moods and conditions within advanced capitalist societies at a time of seemingly interminable global conflict. Once again this brings the doubled-edged nature of precarity to the fore. For while precarity provides

a platform for struggle against the degradation of labour conditions and a means of imagining more flexible circumstances of work and life, it also risks dovetailing with the dominant rhetoric of security that emanates from the established political classes of the wealthy world. This is particularly the case for those versions of precarity politics that place their faith in state intervention as a means of improving or attenuating the worsening conditions of labour.

Ontological Insecurity in the USA

Undoubtedly, current perceptions of insecurity are complex and cannot be traced to a single source such as global terrorism, precarity at work, environmental risk or exposure to the volatility of financial markets (say through pension investments and/or interest rates). At the existential level, these experiences mix or work in concert to create a general feeling of unease. And the conviction that the state (whether conceived on the national scale or in terms of some more extensive sovereign entity like the E.U.) can provide stability in any one of these spheres is not necessarily separable from the notion that it can eliminate risk and contingency in another. Not only does this imply that the struggle against precarity, if not carefully conceived, may bolster and/or feed off state-fueled security politics, but also it suggests that there is something deeper about precarity than its articulation to labour alone would suggest – some more fundamental, but never foundational, human vulnerability, that neither the act nor potential of labour can exhaust.

This is certainly the sense in which Judith Butler, in *Precarious Life* (2004), confronts what she calls *precariousness* (which should be distinguished from *precarity* intended in the labour market sense). For Butler, precariousness is an ontological and existential category that describes the common, but unevenly distributed, fragility of human corporeal existence. A condition made manifest in the U.S. by the events of 9/11, this fundamental and pre-individual vulnerability is subject to radical denial in the discourses and practices of global security. For instance, Butler understands President George W. Bush's 9/21 declaration that 'our grief has turned to anger and our anger to resolution' to constitute a repudiation of precariousness and mourning in the name of an action that purports to restore order and to promote the fantasy that the world formerly was orderly. And she seeks in the recognition of this precariousness an ethical encounter that is essential to the constitution of vulnerability and interdependence as preconditions for the 'human'.

Key to Butler's argument is the proposition that recognition of precariousness entails not simply an extrapolation from an understanding of one's own

precariousness to an understanding of another's precarious life but an understanding of 'the precariousness of the Other'. Her emphasis is on the relationality of human lives and she sees this not only as a question of political community but also as the basis for theorising dependency and ethical responsibility. Rather than seeking to describe the features of a universal human condition (something that she claims does not exist or yet exist), she asks who counts as human. And with this reference to humans not regarded as humans, she seeks not a simple entry of the 'excluded' into an established ontology, but an insurrection at the level of ontology, a critical opening up of the questions, 'What is real? Whose lives are real? How might reality be remade?' (2004: 33). At this level, the theorisation of precariousness impinges on fundamental ontological questions and, to this extent, it suggests a means of joining some of the actions and arguments surrounding precarity to a more philosophically engaged encounter with notions such as creativity, contingency and relation.

As noted above, Butler's argument, while claiming to effect an ontological insurrection, takes shape above all in the post-9/11 United States. A passionate appeal for the necessity of critique under circumstances where popular energies have rallied around the executive branch of government, *Precarious Life* understandably focuses on the progress of global war and the transformations of life within the U.S. polity. But it also presents precariousness as a general principle of the human (and who counts as such). And while it emphasises the uneven distribution of this basic human fragility, it does not analyse the workings of this unevenness in detail (as if they were merely given, coincidental and outside the realm of fundamental ontology). In other words, Butler does not explore the whole problematic of global capitalism and its relations to the current conflict.**[3]** Certainly these relations are of a complex order and cannot be reduced to the simple formula ("no blood for oil") that would have war working always in the service of capital and vice versa.

In a world where the operations of the global market (by which any object, regardless of location, can be valued and ordered) do not necessarily accord with the logic of strategy (by which spatially fixed resources, subject to calculation and command in the aggregate, are brought under control by state actors), there are likely discrepancies to exploit between the workings of capital and the enterprise of security (Neilson, forthcoming). For instance, the effort to block the flow of laundered money that funds terror networks requires a tightening of regulation on that very

[3] While more expansive on the global dimensions of this problematic, David Harvey (2003) also remains primarily within a U.S. political imaginary. See also Arrighi (2005a, 2005b).

institution that lies at the heart of global neoliberal enterprise, the deregulated financial market (Napoleoni, 2003). Indeed, it may be in these gaps, where security and capital come into conflict, that the motif of precarious life receives its most radical articulation, where precariousness meets precarity, and the struggle against neoliberal capitalism that dominated the global movement from Seattle might finally work in tandem with the struggle against war. Such a realisation must be central to any politics that seeks to reach beyond the limits of precarity as a strategy of organisation.

Innovative Capacities and Common Resources

Key to understanding the human capacity for innovation is the recognition that such change is not the norm but the exception, something that occurs rarely and unexpectedly. Virno (2004b) pursues a reading of paragraph 206 of Wittgenstein's *Philosophical Investigations*, concerning the impossibility of applying rules, in an attempt to understand the conditions of such an exception and their radical difference from organisational models that aim to extract an economic value from creative practices. Crucial for Virno in Wittgenstein's understanding of normative or rule-governed behaviour is that the rule can never specify the conditions of its application e.g., there is no rule that specifies how high the tennis ball can be thrown during service. For such a specification to be made, another rule about the application of rules would have to be instituted, and so on to an infinite regress, just as in the normative legal system of judicial precedent. Creative innovation, however, requires a mode of action that escapes this formal space of regulation.

The parallel here to the theory of the political state of exception (explored by thinkers such as Carl Schmitt and Giorgio Agamben) is intentional. Just as Schmitt bases his political theory on the notion of the sovereign decision, which cannot be reduced to the infinite regress of legal precedent, so Virno contends that the innovative action must break with the regularity of habit and the regulation of convention. In the exception, the rule becomes indistinguishable from its application, or, to put it another way, each event or action rewrites the grammar of the system. The innovative action is thus not simply a transgression that breaks the rules – a kind of avant-garde contestation of existing institutional arrangements. Rather, it is an action that involves an abrogation of rules, a fundamental recasting of grammatical propositions, and a consequent redefining of future generative possibilities. For all this, it is not a sovereign action (a kind *creatio ex nihilo* that finds its apotheosis in the romantic ideal of the artist as god). Innovative action is necessarily intersubjective action, forged in

the complex and unstable relations between brains and bodies. Its model is not the sovereign who decides on the exception but the language or form-of-life that changes through what might be called a non-sovereign decision, at once distributed and diffuse, or, if you like, an exception-from-below. This is why phrases such as "innovation culture" or indeed "creative industries" ring of an oxymoronic disingenuousness that wants to suggest that innovation can coexist with or become subordinated to the *status quo*. In this context, innovation becomes nothing other than a code word for *more of the same* – the reduction of creativity to the formal indifference of the market.

At the same time, Virno recognises that this reduction is precisely what contemporary capitalist production mandates. If, for Butler, human relation is possessed by a precariousness that furnishes a complex sense of political community, Virno argues that this same instability comes to invest the labour relation that, under post-Fordist capitalism, demands creative linguistic innovation. At stake for him is an affirmation of Marx's notion of *general intellect*. Common to the disparate situations and conditions of individuals and their social horizons is a shared capacity to draw on the resources at hand. And this is why Virno and other post-operaista thinkers have advocated exodus as opposed to revolution as a political tactic. Such an advocacy of escape or "engaged withdrawal" does not imply a hermetic retreat from modernity. Rather, it involves both the recognition that capitalism removes the means for living other than by recourse to wage labour and the imperative to search for strategies and opportunities that allow collective intellect to subtract its creativity from the integuments of productive labour. What interests us is the form that such an exodus might assume within contemporary socio-technical formations characterised by a proliferation of networks alongside a host of institutions that are becoming increasingly burdened and recondite.

Whatever the current possibilities for desertion or exodus, it is hard to escape the observation that the corporate-state nexus increasingly asserts a sovereign command over the very matter of our bodies. With the informatisation of social and economic relations, intellectual property is the regime of scarcity through which control is exerted over the substance of life. Think of the rush to patent recombinant DNA sequences or the pressure placed upon agricultural industries and government representatives to adopt genetically modified organisms. Despite the dot.com crash of 2000, stocks in biotech industries are again yielding substantial profits – a phenomenon fueled in part by aging populations anxious to invest in narratives of security and technologies of arrested decay. This revival of biotech stocks can also be seen as a response to the affective economy associated with the shift of

venture capital into the business of bio-terrorism and a move from what Melinda Cooper (2004) calls the irrational exuberance of nineties speculative capital into an era of indefinite insecurity and permanent catastrophe within a post-9/11 environment.

Yet where resides the space of commons exterior to both the state and the interests of the market? Indeed, is it even possible to invoke this sense of exteriority within an ontological and social-technical field of immanence and political economy in which capital interpenetrates the matter of life? It is no longer feasible to draw a homology between the commons and the notion of the public – a social body too easily assumed as co-extensive with the citizen-subject. Both the citizen-subject and the public are categories that refer particularly to European and North American political legacies that have long since declined as constituent powers of democratic polities (see Montag, 2000 and Nowotny, 2005).

If 'the public' has become a non sequitur vis-à-vis the informational state, there is nonetheless a persistence of social desires to create 'modulations of feeling' whose logic of expression is antithetical to the strictures of control set forth by the informational state.[4] The widespread practice of file-sharing within peer-to-peer networks is routinely cited by many as an exemplary instance of resistance to the closure of the commons by IPRs. The increasing adoption of open source software and Creative Commons by governments and businesses across the economic spectrum is another example of a kind of reverse engineering of the super-structure by the educative capacity of civil society and informational social movements. Certainly, we would not want to underestimate the positive potential of such transformations and redefinitions of information societies. Yet just as it is clear that such activities endow networks with an organisational force, so too is it uncertain whether substantive change will eventuate in the material situation of precarious labour and life.

One could also speak of a continuum of affect, of communication and sociality, that functions as the pre-individual reality or common from which the refrain of precarity is individuated as a series of iterations on labour and life. To be sure, there is a common material basis at work here, one whose constituent forces emerge from a growing indistinction between intellect, labour and political action. This intermingling, however, is accompanied by a mutable process of adaptation in which a symbiotic relation between labour and capital "has given life to a sort of paradoxical 'communism of capital'" (Virno, 2004a: 111). Such a transformation of capital is manifest in

[4] Our use of 'modulation of feeling' is opposite to that of Massumi (2005: 32), who attributes such an operation of biopower to the Bush administration's need to manage populations in a post-9/11 environment in which "timing was everything".

the attacks made in the 1960s and 70s 'failed revolutions' against the determining power of the Fordist welfare state and corrosive effects of wage labour upon life in general. Again, it is the doubleness of precarity that is the substrate of post-Fordist capital – a desire for greater flexibility and perceived freedom to choose one's style of work (the expressive capacity of labour-power) coupled with an increased uncertainty, not to mention frequent struggle, that is normative to the experience of life (ontological insecurity).

Communicative Networks and Creative Expression

It is one thing to think innovation as a common resource outside the phantasm of total market control; it is another to consider the operation of such a resource. Here we find it necessary to engage the materialities of communication in order to illuminate further the exceptional quality of innovation. In so doing we introduce the political concept of the "constitutive outside" and proceed to an analysis of the creative industries. Our interest is to discern the ways in which the ontology of precariousness is immanent to networked systems of communication. How, we wonder, do the internal dynamics of social-technical communication constitute an ontology that oscillates between uncertainty, fluctuation and fleeting association on the one hand, and moments of intensity, hope, and exhilaration on the other? In what ways are global information systems embedded in singular patterns of life? Is it possible for the pre-individual, linguistic-cognitive common – or general intellect – to operate as a transcendent biopolitical force by which living labour asserts a horizon of pure virtuality (unforeseen capacity to create and invent)? How might an ontology of networks be formulated, and does creative potential subsist in networks of social-technical relations?

The technics of communication are always underpinned by a "constitutive outside" (Rossiter, 2004). The outside holds an immanent relation with the inside. While the outside occupies a minor status within systems of communication, it nonetheless operates as a field of material, symbolic and strategic forces that condition the possibility of emergence of the inside (Mouffe, 2000: 12; Deleuze, 1988: 43). At the level of discourse, the constitutive outside functions to establish the limits of expression. Most creative industries policy and academic research, for instance, is still to address the casualised insecure working conditions of those who generate the intellectual property that is exploited within an informational, knowledge economy.**[5]** In this case, the needs, interests, demands and effects of precarious labour are excluded from the discourse of creative

[5] While a recent UNCTAD (2004: 3) policy report notes that 'too often [creative industries are]

industries, yet, paradoxically, they are a primary element in the network of conditions that make possible the economic development derived from cultural production and service labour.

At the level of materiality, the constitutive outside precedes the exteriority of technical, economic, geographic, institutional, social and cultural configurations that shape the hegemon of communication systems. The constitutive force of the outside enables the exteriority of relations that comprise the complex form of informational, economic and social systems. Complexity, however, is not something that is easily accommodated in the genre of policy and the activities of what remain vertically integrated institutional settings. Much creative industries discourse in recent years places an emphasis on the potential for creative clusters, hubs and precincts as the social-urban arrangement or model that is supposedly the conduit best suited to the establishment of cultural economies. Along with "mapping documents" that set out to demonstrate "value-chains" of innovation based on the concentration of a range of cultural activities and stakeholders, this focus points to the inherent fragility of cultural economies.

In short, there is little empirical correspondence between the topography of "mapping documents" and "value-chains" and the actual social networks and cultural flows that comprise the business activities and movement of finance capital, information and labour-power within creative economies. Such attempts to register the mutual production of economic and creative value are inherently reductive systems. Capital always exceeds regimes of control, inevitably destabilising the delicate balance between determinacy and indeterminacy, regulation and inherent precariousness. And for this reason we maintain that capital is a force whose dynamic is shaped considerably by cultural and social inputs whose register, while largely undetected, comprises a common from which new social forces and modes of creative organisation may proliferate.

The implication for creative expression as it manifests in the variegated patterns of labour within informational economies can be summarised as follows: the regulation of labour-power is conditioned by the dual regime of scarcity and border control. Scarcity consists of that which is perceived and constructed as finite and inscribed with economic value e.g., the logic of IPRs. Boundaries confer the expressive form of creative labour and its concomitant networks with either discursive legitimacy and economic

associated with a precarious form of job security', such observations remain the exception within much policy-making and academic research on the creative industries. A recent issue of The *International Journal of Cultural Policy*, edited by David Hesmondhalgh and Andy C. Pratt (2005), tables some of the most sophisticated research on cultural and creative industries to date. See also O'Regan, Gibson and Jeffcutt (2004), Gill (2002), and Ross (2003).

value or disavowal and the suspension of movement. The governance of networks, however, is not so straightforward or easily defined. If the ontic of networks is underscored by interpenetration and disequilibrium – as evidenced, for example, in the fragile life of mailing lists, prone as they are to rapid destruction, irrelevance and closure if actors such as "trolls" are unchecked (Lovink, 2003) – then it becomes much harder to generalise about the expressive capacity of social-technical life as it subsists in a state of permanent construction.

For all the talk in creative industries policy and analysis of unleashing the creative potential of cultural workers, what comes to pass is the reproduction of the same. Such an economy is, after all, exercised through the model of clusters.**[6]** Who ever said feudalism was eclipsed by the modern state system? Despite the pervasiveness of creative and cultural networks within government policies and academic literature, one is hard pressed to find evidence of networks in any operative sense. Projects that assemble a range of actors or stakeholders within a cultural precinct or business park are simply not the same as networks. For our purposes, networks consist of social-technical relations that are immanent to the media of communication. The collaborations that ensue within communicative networks are frequently promiscuous, unlike the "old boys" style of partnerships developed in what is much better defined as the cluster model of the creative industries.

It is highly unlikely that the creative industries will begin to register in their mapping documents or annual reports the dark side of labour (domestic, care and migrant labour, for instance) and environmental degradation that attends any process of industrialisation. Similarly, young people working in the cultural and new media industries will most certainly be deprived of realising any ambitions of creative autonomy. Despite the various efforts to benchmark economic productivity, creative activities and partner linkages

[6] The articles on "creative networks" published in an issue of *Media International Australia* edited by O'Regan, Gibson and Jeffcut (2004) adroitly diagnose the shortcomings of the "creative cluster" model. The analyses of inter-linkages between local practices of production and consumption and global policy frameworks goes some way toward identifying the complexity of network systems. And their advocacy for "strategic research and policy … [that] build[s] situated knowledges" is something we also support. Even so, their discussion of "creative networks" nevertheless falls short of attending to the problem of precarity that defines the situation for many within the creative industries. The contribution by Chris Gibson and Daniel Robinson (2004) on creative networks and working conditions in regional Australia is an exception. But their analysis of employment statistics and informal social networks is divorced from a consideration of the subjective dimension of socio-technical systems and the substantive role of subjectivity in the construction of networks.

within the creative industries, there is great variation in terms of what creative industries mean for various stakeholders. The material complexity of cultural production is a rarely evident in creative industries policy, which is consistently unchanging. And while this is indicative of the limits of policy as a genre of expression and routine of practices, there is nevertheless an implicit belief that government and business interests can be realised in some sort of instrumental fashion.

In focusing here on labour-power and the ways in which exclusion makes possible the internal coherence of creative industries, our intention is not to somehow make secondary the situation of precarious life. The various forms of exclusion detailed hold implications for the capacity of living labour to maintain a sense of renewal within a state of ontological insecurity. Indeed, as maintained earlier, labour and life occupy a common space of indistinction. Yet stripped of all guarantees, life and labour have one option left: political action. And the potentiality for political action as a transformative force is what cultivates the generation of fear by the dominant political powers. Potentiality itself is an uncertain force – a precarious resource common to labour and life – and as such, is the basis for innovation from which new forms of organisation and life may become instituted.

Freedom without Security

It is worth recalling that the precondition of surplus-value is cooperation. In this sense, the potential for alternative modalities of organising creative labour is inseparable from the uncertain rhythms, fluctuations and manifestations of global capital. Indeed, it is precisely this relation between labour-power and capital that defines the immanence of socio-technical networks. Given these mutual dependencies, it is not beyond reason to imagine that variations of living labour might, as Jayadev noted at the start of this essay, “reclaim the time of life”. Such interventions are not as radical as they might sound. But they nonetheless involve transforming precarity as a normative condition precipitated by the demands of capital.

In the case of creative labour, a reclaiming of the time of life entails a shifting of values and rhetoric away from an emphasis on the exploitation of intellectual property (and thus labour-power) and reinstating or inventing technics of value that address the uncertainties of economic and ontological life. Engaging rather than sublimating the antagonisms inherent to such experiences is, in part, a matter of rethinking networked modes of relation. The many accounts, events and analyses on precarity documented earlier in this essay begin to tell the story of social-political networks seeking to institute creative projects responsive to situations of living labour. The communication of such efforts begins to comprise a

history of networks as they subsist within an informational present. Moreover, we find here a common resource from which lessons, models and ideas may be exchanged and repurposed as transformative techniques.

Such processes, however, are by no means straightforward. By posing the question of the unstable ontology of networks alongside that of migration and border control, we are forced to think together the precarity that invests the labour relation and the regime of border reinforcement, which is one of the primary registers of the current ubiquity of war. Earlier we cited the creators of a free newspaper and collaborative filtering project who described as 'social dynamite' the attempt to combine freedom of communication with freedom of movement. But the effects of this social dynamite are disparate and, in their very multiplicity, inflate the tendency to treat these phenomena as separate moments. Such a disconnection again poses the question of commonality and the resources it might supply for the imagination of alternative forms of life.

The ongoing tussle between those who cast the creative worker as the precarious labourer *par excellence* and those who assign this role to the undocumented migrant is one symptom of this divide. Such a debate is certainly worth having, but it also misses the point: that being, to alter the circumstances in which capital meets life. All too often the precarity struggle revolves about the proposition *life is work*. But the challenge is not to reaffirm the productivism implicit in this realisation but rather to take it as the basis for another life – a life in which contingency and instability are no longer experienced as threats. A life in which, as Goethe wrote in *Faust II,* many millions can "dwell without security but active and free".

* This is a shorter version of an essay that was first published in Fibreculture Journal 5 (2005), **http://journal.fibreculture.org/issue5/neilson_rossiter.html**.

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• Author : Mongrel/Harwood

• Free Media from the Mouth of the Thames

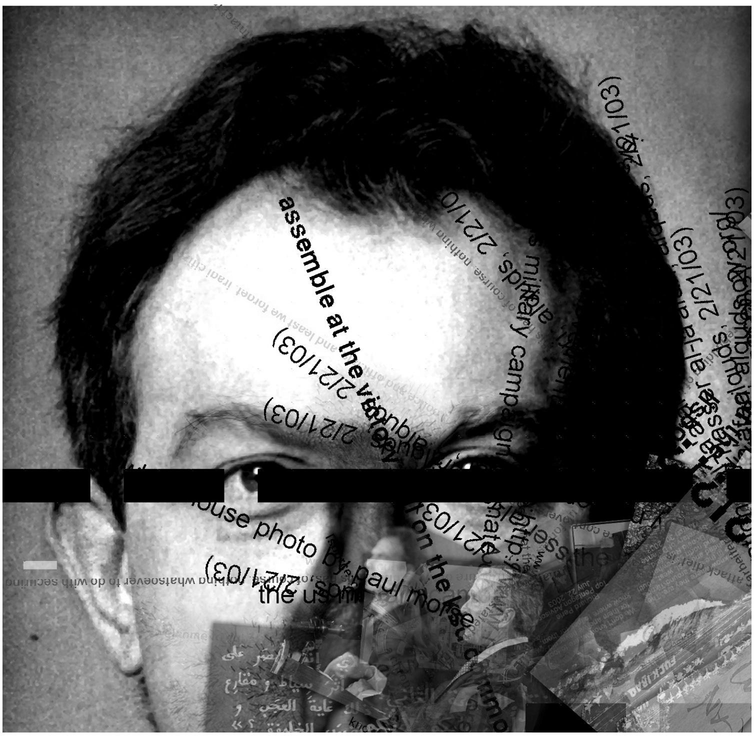
C2C Railway Journey <-> ADULT RETURN = The mouth of the Thames to the Tower of London.

I close my eyes and the distribution of animals, objects, motions, events and places flash – red . grey . grey . red – as blood vessels enlarge my eyelids. I remember that some metaphysical poet or another in 1500 + (something) said that if you rub your eyes and see a white light – it is the glow of your soul.

From the random noise of light reflected through the window and over photo-receptors situated in my ocular mechanism (eyes, with intrinsic and extrinsic eye muscles, as related to the vestibular organs, the head and the whole body), my system fails to explore and find convergence.

Even so the variables and structure of the ambient light engage me, as I slowly remember my ability to de-code, acquired from an early scouting lesson in the Morse codec. (1791 – Samuel Finley Breese Morse a painting and sculpture professor with an early interest in Wired Networks).

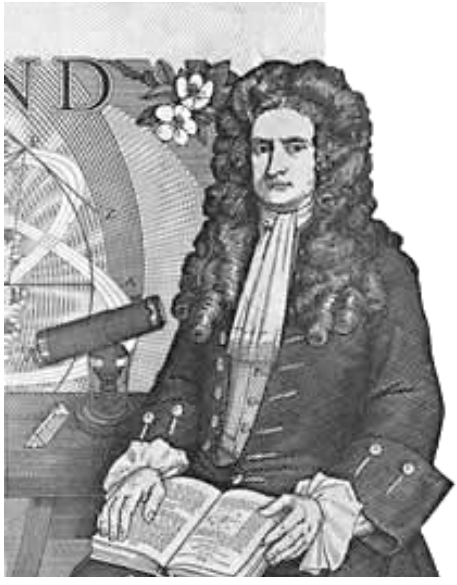
I quickly wrote down the dots and dashes of code entering my much-adorned visual system and it is these notes I pass on.



Picture •• blair.jpg

use Context;

We exist in a world where powerful social elites live their life through exceptional fantasies – they mistakenly believe they can best safeguard their privilege by hiding their bonsai trees of knowledge in secret societies, under the tomes of law court papers, magic rituals – art – religions, and the use of well tooled-up armies.



Picture •• Newton

pre-requisites of the computer;

```
1       Money->{Bank_of_england}->{Newton}.
2       Mechanisation.
3       algebra.
```

use Constant CODE_OF_WAR => “anything taken out of the hands of the many and put in the hands of a few”;

The sands of arabia grown.
The reign of cruelty is begun.
Disguised in charity & pity & peace.
Pity excusing poverty.
Charity excusing wealth.
Peace an armistice of fear
Reproducing the **CODE_OF_WAR.**

```
##########################################
#! /usr/bin/perl
$s='$c = chr(39);$t = q^#! /usr/bin/perl
$s=^.$c.$s.$c.q^;eval $s;^."\n";print $t
####             execute-me          ####
#                                        #
#  +--^----------,-----,----,------^-,   #
#   | |||||||||   ----:    |         O   #
#   +---------------------^---------|    #
#     _,---------,-----,-----------~     #
#       / XXXXXX / |    /                #
#      / XXXXXX /   /                    #
#     / XXXXXX /-----~                   #
#    / XXXXXX /                          #
#   / XXXXXX /                           #
#  (________(                            #
#   -------~                             #
###                                    ####
';eval $s;
##########################################
# cut out the code above - save it as -
# war.pl and run it.
##########################################
```

```
my @Transportation = qw (
                !Fast_Cars
                Art
                Science
                Code
                illness
                Critical_theory
                A_chat_in_the_street
                Sex
                difference
                food
                Music
); # WHATEVER
```

Picture •• transportation->old()

Instead of exceptional fantasies mongrels everywhere lust after the experience of transportation->new() while being firmly rooted to the ground. We require transportation->new() from present situations to other states of pleasure and pain. Out of the gutters and into the stratosphere of the imaginary – the vehicle of our transportation is of little consequence.

Our desire is to fly with our own wings forged from the manacles of oppressive abstraction – that is all that is important.

```
use Constant VISIONARY #(depreciated) => (“the birth of the
telescope 1608”) == (“objectification of vision”);
```

Bobby Reason was born weak from typhus fever and unable to crawl away from his body of infection. He spends his time passing voltage through the pathways of least resistance to help him amplify, copy, and replay sounds. Extending his ears to where his eyes used to be. He forms lenses to put in place of his imagination. Whilst doing so he manages to split light and holds the lower end of the spectrum (radiation) with special tools he forged out of the industrial revolution to replace his hands.

...And after all is done.

He gets out the air-freshener to replace his nose.

```
use Constant VISIONARY  (new->{MUNDANE}) =
(5 September 1951 LEO (Lyons Electronic Office))
==
(computational vision == ‘electronic brain’);
```

Picture •• Lyons Electronic Office

Bakeries Valuations

Lyons built and operated the world's first business computer which they called LEO (Lyons Electronic Office). This came into use months before any American computer. Initially intended for in-house use only, the machine caused such a stir that a company was started to build the machines for other UK organisations. Computers were exported to Australia, South Africa and Czechoslovakia when this was still behind the 'Iron Curtain'.

Refuse reason while resurrecting the dead

Part 1:

Take a data-base of a social atrocity and harvest from it the ages, names and heights of individual victims. From this the computer extrapolates the vital lung capacity for each person. This is converted to cubic litres of last breath of each victim e.g.:

```
$VitalLungCapacity = ((0.041 * $Height) - (0.018 * $Age)) - 2.69;
$Victim_Breath_LAST = $VitalLungCapacity;
```

Part 2:

Set up or use a preexisting public address system placed in the vicinity of the atrocity or contextually related area. With the sound radiating up to one mile from the source. Push the sum of all the victims' vital lung capacity of air through the audio system;

Example->Srebrenica->Amsterdam->

From reports of the International Committee of the Red Cross we estimate that 8000 Bosnian Muslim men were killed by Bosnian Serb forces.

```
#We know the ages are from 15 - 70;
#And the height of each individual is between 150 and 180;
 $Height = 170; $Age = 35;

 $VitalLungCapacity = ((0.041 * $Height) - (0.018 * $Age)) - 2.69 ;

( 3.65 litres * 8000 bodies ) = 29200 litres of air.

#We then push 29200 litres of air through a speaker system in the
#wave form of a scream.
```

BIT_COMMON <=> CODE_OF_WAR

Picture •• Spanish Journalist One of Two Journalists Killed in US Army Attack on Journalist Hotel in Baghdad

The bit-commons:

When new common cultural spaces open up in the public domain as they did with the internet in the 1990s, those with the proprietary right or economic might usually attempt enclosure. This activity acts as a raw siphon of economic value as well as associating with the enforcers of enclosure the powers of boundary. (inside, outside, entrance, exit)

At first, experimentation is pursued in all directions until the pathways of least resistance are charted and turned to profit – at which time generalised investment becomes scarce – investment being redirected to deepen and widen the channels of least resistance to profit. This receding wave of investment from the experimental – leaves behind islands of adventure to be colonized by artists, deviants, outsiders, asylum seekers, immigrants, pirates and the insane.

People adopt many strategies to keep their islands open and free at these moments of enclosure, they start creating protocols and formats collectively. Sailors of these isles start transporting ideas of freedom, bounty and hope to foreign ports attracting new settlements.

use Constant => BIT_COMMON

- **ALL** knowledge **NO MATTER WHAT**, should be available to us. Whether nuclear arms manufacture,
- anthrax breeding colonies
- or the environmental impact of nail-varnish remover in the tanning factories of Southend-on-sea Essex U.K.;

Rise up on wings of desire. Fly from rats lice poverty famine && violence - escape the **CODE_OF_WAR** enter the palace of the **BIT_COMMON.**

use Constant POCEDURAL_CORRUPTION => "mathematical models used outside of their purist application follow the agenda of a well aimed machine gun**"**
(hutton enquiry <=> CODE_OF_WAR)

(**WTO** <=> (Merchandise trade by region and selected economies, 1980-2002 Excel format (file size 487KB)) ==
((Commercial services trade by region and selected economies, 1980-2002 Excel format (file size 282KB)) ==
((Merchandise exports, production and gross domestic product, 1950-2002 Excel format (file size 91KB))

(The Revolutionary Politics of Bar-Charts) == (Towards a critique of data-visualization)

It is a questionable assumption that problems in economics, sociology, politics, language, law and healthcare can be resolved by quantification and computation.

```
sub WhyIsTheBlackManPoor{

        foreach(@PoorBlackMan){
                $Embedded_Culture  = &Calculate_cultural_context;
                # returns IMPOSSIBLE
                $Economic_Poverty =
                &EveryRichFatBloatedArseLickingWanker;
                # returns CODE_OF_WAR
                $NaturalResources; # Depreciated
        }
}
```

Picture •• BushBlairWar

We need wings to investigate procedural corruption wherever and whenever it takes place.

Critique the mathematical formulae (formulation of statistical data) that are used to report on the psychosocial sphere in the media, and on the bottom of bills sent through our doors.

Language as Data:

Mary, Queen of Scots' head fell ceremoniously from her shoulders into a basket. Peterborough, England: 8:30am on 8th February 1587. From under her skirts ran a small dog. The seed master of the modern English Bull Terrier. Mary's plot against Queen Elizabeth I was discovered by comparing her secret communications with a word frequency table of English, derived from Arabic learning.

Paranoid social elites on the way to or from war have always composed, spawned, coded systems by which they and their minions may sleep better at night.

Language as Data, a mathematical study of the periodicity or norms of word use in a language. In English text generated from some none linguistically impaired peoples, 'the' makes up 6.18 percent of the corpus of English words. We find that 43% of the corpus is pronouns, conjunctions, other function words and a few common verbs. Word frequency is used to inform religious scholars of who authored various parts of various bibles and to inform search engines of content words in web sites, AI development and in detecting the normalcy of language.

Critique_it!

The exceptional fantasies that the social elite has been living through have spawned strange and bewildering hierarchies of knowledge and war. We need to squash these at the level of algorithm and representation.

The algorithm creates the scaffolding on which the author of a knowledge – based system hangs himself.

While Oliver Cromwell discusses the new Levellers' constitution for England (at the Church of St Mary the Virgin, Putney, Surrey) with factions of the New Model Army, Descartes pays a call on the sickly young mathematician Blaise Pascal.

```
(Pascal Programming language)->{honour}
for (mechanical calculators).
```

Descartes wants to speak to Pascal about his vacuum experiments, but, seeing how weak he looked, Descartes volunteered some medical advice:

```
return (bed-rest and a lot of soup (force bouillons));
```

In this city's dark gates – the tree of knowledge leads to this
mansion built on misery.
Here the dress code of secrecy cloaks the flesh in fear.
This is how the proprietary city gets built,
Hidden in every proprietary street,
In every proprietary house,
In every proprietary possession we meet.

```
NO to TAX (True Levellers 1647)->{Diggers}
!=
(Public money being spent on proprietary systems)
```

Rise again the true Levellers-republic, rise on wings of knowledge flowing in the domain of the many.
For heaven is more knowledge then one man can muster in a lifetime.
For hell is more knowledge then one man can muster in a lifetime.

Mongrel/Harwood

• Author : Matthew Fuller

• Digital Objects

Digitality and objects

If software has a social and technical imaginary, if it is culturally active as a force in itself, what does that mean for data more generally, the objects constructed, giving rise to or handled by software?

In a recent interview, the philosopher Michel Serres[1] suggests that a typical contemporary development is a drive experienced in science to aim towards an understanding of the specificity of an object. Earthquake-causing tectonic fault-lines or individual livers are rendered, by various methods and by the peculiar capacity for differentiation typical of digital analysis, as things with individual qualities and traits rather than generalised or diagrammatic instantiations of a 'type'. Every scanned liver, every library book in a database, every phone, person or every mapped asteroid is also a digital object.

Under digitalization more generally, there is a widespread tendency for all objects, processes and qualities to become transduced by data-gathering, patterning and identification. Take a virus, this little darling is known by virtue of an electron microscope to be so cute and cuddly and roundishly polygonal with just enough weird fuzzy bits and clotted fraying edges to make it amenable to love. It looks like another planet. One you could escape to, off earth, find death. And this is the thing about an object, no matter how much of a specificity it can be recognized as being, it is not alone. David Wojnarowicz writes, "When I was told that I'd contracted this virus it didn't take me long to realize that I'd contracted a diseased society as well".[2]

Over a decade after his death in New York on the 22nd August 1992 I want to hold on to this quote from Wojnarowicz, in fact all of his work, because it stands as a reminder of much of what is missing from debates around software; a thick, brilliant, absolutely enraged, vividly sexual and gregarious involvement with multiform life. Software is part of this, but not much. That there are programs such as iLife or MyLifeBits that would have you believe so, life suffused with the toxic long-chain polymer aroma of fresh white computer plastic, there are programs such as enterprise management applications which would like to have you not notice their structuration of your life. The X-rays from hell that Wojnarowicz writes about are not simply that of the perfectly named and unique human organ, they are about the tenderness and corporeality of living things, bodies. When, at birth or before, you

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[1] See Michel Serres and Peter Hallward, 'The Science of Relations: an interview', in *Angelaki*, vol.8. no. 2, issue editor: Peter Hallward, Routledge, Oxford, 2003, p 231.

[2] David Wojnarowicz, 'Postcards from America, X-Rays from Hell', in *Close to the Knives, a memoir of disintegration*, Serpent's Tail, London, 1991, p 114.

contract the diseased society that you live in, you, as an object, are in connection with a million relations of dimensionality, permutational fields of being.

But what Wojnarowicz's text also shows is that things do not just all fit. There is no necessary total inter-relation of all parts with every part a mirror and a node of the universe with a pre-established harmony between all substances. There are, as a shorthand, enormous, insensible gaps between knowable parts. This essay does not attempt to remedy such a situation. What is hoped is to set out some of the terms in which objects are composed by looking at recent software projects in which the nature of the digital object is recognized as being significant.

It has been established that software has a politics, an aesthetic, that these elements and compositions of algorithmic logic invent, deploy and make stable – different kinds of sociability and inter-relation with other elements. However, such general concepts need to be made more supple and detailed. If materials have their own capacities, which may or may not match the scalar models which we have of them and by which we arrange behaviour with and through them, what does this mean for digital objects? How are they separate, at what scale, and how can these permutational fields, their dimensions of relationality be sensed, made palpable and used?

Temporality

The work of Walter Benjamin, performing 'a sort of spectrum analysis'[3] on the complex relations of history and futurity embedded in and coursing through the fruits of the arcades, is perhaps significant here. Objects carry utopias with them, imaginary worlds of ideal use and misuse, of combination with other elements in a planned or tasteful grammar, of imaginary relations to the world as modern or bucolic, or as easy, sophisticated, charming, portable, educational, ornate and so on. In Benjamin the sacred and predictable path in time from the lower to the higher is apparent in some texts, as in those moments when he is more fiercely Marxist. In others, as in the text where he most clearly states his conception of historical materialism,[4] this philosophy appears as a weave, with threads weft in and out of the warp, to disappear, reappear,

[3] Walter Benjamin, 'Paralipomena to 'On the Concept of History'', in *Walter Benjamin, selected writings, volume 4, 1938 -1940*, trans. Edmund Jephcott et al., Howard Eiland and Michael W. Jennings, eds., Harvard University Press, Cambridge, MA, 2003, p 402.

[4] Walter Benjamin, 'Eduard Fuchs, Collector and Historian', in *Walter Benjamin, selected writings, volume 3, 1935 -1938*, trans. Edmund Jephcott, Howard Eiland et al., Howard Eiland and Michael W. Jennings, eds., Harvard University Press, Cambridge, MA, 2002, pp 260-302.

changed in their context. It is in some sense an immensely horizontal, parallel vision of time, time as a carpet, as well as one that includes a notion of work and of process, a woolly cellular automaton, seething with bugs, stray threads and knots "as an afterlife of that which has been understood and whose pulse can be felt in the present".[5] But it is also one "directed towards a consciousness of the present which explodes the continuum of history".[6] That is, it is an approach to time that is thick, that senses the muffled thunder and still present sparks in objects and ideas 'of the past' and that draws the question of what is to be done into the present with a sonorous and stinging sense of the possible.

We might ask, what is temporality to a digital object? We know that versioning forms one sort of clock-setting in both proprietary and free software that is interwoven with that of the hardware manufacturer, but it is also clear that some software goes explicitly sideways in relation to such orderly time (think of Dyne:bolic, a Linux distribution written only for low-end, cheap, Pentium processors).[7] Asking how software produced using art methodologies operates in relation to time is not simply so that we can confirm the existence of dull retro-styled work, but also to see it as a potential dimension for escape and invention, for tinkering. As standard software marches onwards with its own feature-panicked elegance it draws a line which in part describes the space of what is possible and which at the same time allows the impossible or the improper to find itself more easily. The development of these projects and others allows the terrain of the digital imaginary to stretch and reflect.

Composition

Shared with Benjamin's understanding that the historical object constitutes a problem in itself is the understanding that an object is never in itself complete. One software project I worked on as a collaboration with Graham Harwood, TextFm,[8] showed that technical organizations call for social and medial organizations around them, certain kinds of work and activity in order for them to occur. This work could not simply be aimed as a downloadable at an individual user on the other side of a PC, but needed organizations, people to work on it, to put up transmitters, use radios and phones, use their knowledge of a city to make news spread in the right way and so on.

But that sense of assemblage does not simply stop at the casing of a

[5] Ibid, p 262

[6] Ibid

[7] see **http://www.dyne.org/**

[8] **http://www.scotoma.org/TextFm/**

computer, or at the head and foot of a script. Elements which are commonly understood to be simply technical – that is to have the horizon of their dimensions of relationality being as described in the accompanying standard object documentation – are here understood as also having capacities drawn out of them according to context and composition. All three of the projects discussed here also have something of this quality, they address more than just a single user, but imagine or invent a social process.

Aside from the social organization that each object induces and is embedded in we can also make this question on a much smaller, 'internalist' scale: what relations are developed between software art and what, say, ICT disciplines might call 'content': text, image files, and so on, but also, what are the ways the software makes elements available for use, hides things, functions or processes as internal to itself, or treats this as that which is passing through, which it works on, that gives it purpose, but which are not themselves software? So organization passes from one scalar state to another, but as it moves, does not stay the same. At each scale, and there are many, different relations of dimensionality come into composition. Social software that reflects upon and incorporates visions of the social that are repressed in mainstream software is a particularly interesting place to begin to look at such issues.

Nine

Nine is a web-based application developed by Harwood for Mongrel.[9] Useable via a browser, it works as a lightweight multimedia collaging structure.

Nine builds on the fact that handling algorithmic materials and logical and procedural processes have become part of peoples' general skills. That is, that people may not necessarily have skills in using computers directly, but they are used to handling social processes that have been reformulated for the benefit of easy computerization. In some contexts this is not necessarily a benign skill, we have all seen parts of life ripped open by computerized arithmetico-material drives founded upon quantification and calculability. But, as a social software[10] project, Nine allies such skills with the capacities people have, as Arjun Appadurai

[9] The software is written in Perl under the GPL. The current working version was finished in 2002 and is currently in preparation for a possible new round of development.

[10] Social software as a term is used here in the sense of the essay, 'Behind the Blip'. However, it is useful to recognize the subsequent use of the term for the more narrowly defined sense of software which is used for social networking and analysis. A useful overview of this area, amongst others, is maintained by Seb Paquet at **http://www2.iro.umontreal.ca/~paquetse/cgi-bin/om.cgi?Social_Software**

says, to live in several social imaginaries simultaneously.[11]

On opening the Nine website you are faced with a grid containing patches of colour. Each install of Nine sits on a server and contains a pre-coded maximum number of uses. The square of squares that you see first when logging-in sets this, a very visible constraint, twenty-seven squares on each side of a square. Each smaller square represents a 'map' of nine images. This set of nines continues, with each image having nine potential hot spots to which data such as sound, text, video, internal link or a zoom can be added. One of the things that becomes apparent very fast in the use of Nine is that the structure of permissions and of hierarchies that sits underneath most software is very much at the surface here, whilst the software is aimed at being "as light as possible".[12] It is extremely rigid about the roles of users and of data. Using the software or reading the Nine help file,[13] you easily become aware of how this software sets each data element in a recursive procedure of sets, permissions and process. The repetitive nature of the work is clear, it is there to force through a thinking about structure. The constraint to nine images is a way of cutting through digital abundance. It means that some kind of selection must be made. When it comes to the nine hot-spots though, it seems as if this may already be too many. I've not yet seen any nine maps with all of these 'used up.' Is the rigid arbitrariness of the number nine as a governing principle tight enough? Nine by nine as a set of commitments to produce material is pretty substantial. At the same time, there are users clearly building up significant archives of material, such as the images, sound and text on Congolese music by Vince.

The means of differentiation of objects are quite clear. How the project then stitches its parts together is rather interesting. One way in which media usually link across, even if only in terms of copyright-forced attribution, is to credit authors. You can patch together a corpus by use of a name. Nine deals with attribution in a more networked manner. Whilst there is no facility to, for instance, add credits to images, other than in a text link, in order for one Nine 'knowledge map' to embed an image from another, it is necessary for the owner of that map to email the person who is responsible for the one in which the picture sits. As a user you

[11] See, i.e. Arjun Appadurai, 'Archive and Inspiration', in Juke Brouwer and Arjen Mulder eds., *Information is Alive, art and theory on archiving and retrieving data*, V2_publishing, Rotterdam, 2003, pp 14-25.

[12] Harwood, in conversation, May 2004.

[13] **http://9.waag.org/Help/** Nine is extremely clearly documented, primarily through the use of minimally annotated images.

are not required to get permission, but you do need to let the other user know of your re-use of material they brought into the archive. The system sets up a simple need for people to network, but more importantly to register that their images have a longer-term life than a quick afternoon's work. Users have often been intrigued by the meanings ascribed by others to their images, the links that are made of them.

In another form of link, the system keeps a flat list of every word used. Map maintainers are prompted by email whenever another user uses the same word. Semi-automated links between discrete texts can thus also be set up. There is thus an interesting interplay between different layers of the database, its ongoing use and the possibility for registering common terms or ideational nodes across time and place. In terms of the way it generates a temporality, Nine has two time-frames: that of the hierarchy allocating permissions which is strictly linear, and that of the keywords which is recursive and looped, finding connections amongst objects even after their entry into the system has been determined by the particular map-owner.

The three software projects here each develop a particular set of mechanisms for collaborative work on data. All three are also in whole or in part written for and arise from workshops in which someone with previous experience of the software, often the producers, works with others who may often have less experience in direct use of computers. Although the softwares are written for a potentially 'universal' usage, they are often particularly local in their application. Nine for instance is often used, and used well, by Imagine IC[14], a small institution concerned with experiences of migration sited only a few minutes walk from where the software was written in Amsterdam's Bijlmer suburb. Crucially, these projects do not formulate themselves in terms of a question of 'access' or as a response to the too rigid concept of the 'digital divide', but as a move to generate the means for multiple digital imaginaries to thrive.

Opus Commons[15]

Opus Commons is a system developed by Sarai Media Centre[16] in Delhi and often used for exhibition purposes by Raqs Media Collective. In a sense the project is an attempt at formulating a concurrent versioning system

[14] **http://www.imagineic.nl/**

[15] Opus Commons' main site is at **http://www.opuscommons.net/** This site is currently being updated and is thus only partially functional. A use of the system developed for the show 'How Latitudes Become Forms: Art in a Global Age' curated by Steve Dietz is available at **http://opus.walkerart.org/**

[16] **http://www.sarai.org/**

(CVS) for digital objects. CVS is a means of storing, tracking, and annotating versions of software or parts of software in a way which allows people to use, view and develop code; to produce multiple variations from the same source; and, importantly, to go back to earlier versions if errors are made. Such a link to CVS is clear in Opus – the archive of its own code is directly linkable from the front page of the Opus site.

Where the interface approach of Nine is to simplify what can be done in order to encourage fast use and to provide extensive documentation for detailed questions, Opus presents the phenomenological difficulty of interface by placing up front an immense quantity of data about each object, its qualities and processing. To those used to the standard behaviour of a GUI which removes or greys out redundant functions according to mode, Opus is a significant confusion. It feels like an attempt to carry over the sensibility of the command line to a graphically rich system and so the screen reads as cluttered. The use of graphic background elements and other more decorative elements – compare the linked CVS for code – suggests that the project might benefit from a clarification of its design. At the same time, the presentation of 'more than necessary' information about the nature of the objects it works with is an explicit part of the aesthetic of this system. Within the area of software art or in digital art generally there is a tendency to what might be called ostentatious desublimation, a ponderous revelation of this or that technical truth of a system which replaces metaphysics with the awe of the, often studiously irrelevant, detail. Opus answers this tendency by turning to account, by making necessary a consideration of the working culture of digital objects. It is however a working culture that is part actual, part imaginary. Perhaps the dream-user of Opus does not yet exist or if they do, it is quite possible that they have a sophisticated enough imagination of software or media not to need this particular armature.**[17]**

Opus puts in place a means by which Serres' immense individuation of parts, inherent to the digital, can be combined with a subtle and compelling way of recognizing and working on variation of use over time. Much of how the system achieves this is through how it arranges its understanding and handling of objects. There is an extensive manual for the project, but the stage is set for the work by a license based on

[17] One feature of Opus is that there is a set of requirements for someone to register as a user. The design of the user as an object is perhaps too present as a schematic to be inviting to easy initial use. As with Nine, the way the user function is entangled with the author position and the repressions and opportunities this affords is highlighted by this registration process and would be worth considering.

the GNU Public License.[18] This version of the GPL is integrated into the project at a functional as well as conceptual level: the repertoire of work activities that Opus is concerned with are the capacity to view, download, transform and upload digital objects, with the condition that any such action contributes to an ongoing shared pool of resources.[19]

There is a particular vocabulary[20] used in Opus which marks out its particular attention to both the mechanics and imaginary of uses and changes to a digital object: Source; Rescensions; Project; Themes; Keywords; Visualisation.[21] The first two are concerned with how the particular object sites in relation to its specificity; there is a hierarchy in time beginning with the first manifestation of an object in the system. Themes and projects are to do with the clustering of objects and the clustering of clusters or parts of clusters. Keywords and the schema for visualising the work provide means for the objects to be linked. The concept of a Rescension is key to understanding the pattern of work:

> A Rescension is either a re-arrangement of an existing text, or a re-working of an existing text, incorporating new materials, and/or deleting some old ones, or a new edition with a substantive commentary or annotation.
> A Rescension is neither a clone, nor an authorised or pirated copy nor an improved or deteriorated version, of a pre-existing text, just as a child is neither a clone, nor an authorised or pirated copy, nor an improved or deteriorated version of its parents.[22]

Here Opus can be seen as experimenting with another set of dynamics of circulation and linkage of digital objects. Whereas Nine uses a spatially-gridded model that interlinks structures of ownership and permission in order to make collaboration something that has to occur explicitly between users, Opus uses sets of spiralling data. Collaboration occurs through the pool of resources and through the availability of particular kinds of objects rather than through direct contact. One can quibble with the possible consequences of using the biological simile of the parent

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[18] For the text of this license, see **http://www.gnu.org/copyleft/gpl.html**

[19] For a discussion of open content licenses in general see Lawrence Liang's forthcoming review of an array of such licenses at **http://pzwart.wdka.hro.nl/**

[20] A related project is Raqs Media Collective's 'A Concise Lexicon of/for the Digital Common', available at **http:/www.sarai.net/compositions/texts/works/lexicon.htm**

[21] More detailed descriptions of these terms are given in the Opus Commons user manual.

[22] From the Opus Commons manual.

and child but what is interesting is its significance in terms of an attempt to produce a way of modelling a system on an understanding of digital objects as things that are always in circulation. The claim that information wants to be free is by now familiar, and in many cases, actually useful. What we know now is that this is not a fait accompli. The inherent capacity of digital objects to be circulated needs a little help, conceptually as well as in terms of technology. It is perhaps in its metaphorical inverting of the usual computer science understanding of the parent and child as describing respective standing in rank (in a directory or network topology for instance) that the significance of this project can be sensed in relation to time. Time becomes resonant and more aware of the fields of permutation and possibility that course through it. The achievement of Opus is in finding a way to begin such work, but more important is the means by which it does so. That is, it is not simply theoretically agreeable, but tests and composes itself also at the level of practice.

Every element has a short description and a longer 'full' description of its 'meaning' and it is also extensively annotated with regard to size, file type and other details. Because the project is grounded on this sense of circulation, reversioning and weaving of digital objects, it pays attention to the cultural implications of file formats, in ways which are often hidden as irrelevant by, for example, content management systems. The project works because it is sensitive to digital objects. I would argue that in the first version of the work this is a little overdone, resulting in a complicated interface, but at a more fundamental level, the project works. Key to this is its treatment and understanding of digital objects and how they are embedded in and engage different working cultures.

Spring Alpha[23]

Serres' brief comment describes a moment in which scientific procedures allow greater insight into material formations. As with PET/CT scans, which produce incredibly delicate and detailed images of the interior of bodies, they lead to the understanding that by virtue of their passage through time, through growth as part of a particular body, through their contraction of a society[24] – all livers are not of one kidney. It also shows that mathematico-material drives continue to expand and

[23] **http:/www.spring-alpha.org/**

[24] Natalie Jeremijenko's 'One Tree' project is interesting in relation to this. Several hundred clones of one tree are scattered over a range of sites with different socio-ecological features. Mapping what happens to these no longer identical trees over the years of their lives forms the core of the project.

modulate compositions and elements in the continuing metamorphosis of being by knowledge and in reciprocal or asymmetric oscillations between the two. When it comes to digital objects as elements in software we can, at times, plan to be rather more shallow. Everything is already a standard object.

How can social software projects establish the conditions for other forms of knowledge to become manifest and active in the use of the digital objects they make available? To put it another way, what happens to the special understanding the poppy farmer, the food manufacturer and the architect have about the objects they take part in generating when you find an object that links them: say, a few wraps of heroin hidden from moisture in a crisp packet and from sight between loose bricks in a wall at the back of a pub? How is it possible to make a systematic (for in software there can be nothing else) domain in which such variations in the use, meaning, capacities and conjunction of objects becomes possible? Alternately, how can the thickness of meaning, of pasts, of repressed potencies which Benjamin senses in objects in relation to time also be made palpable in the seemingly ever-on presentness of digital objects?

Spring_alpha is an open source gaming system currently in the early stages of development, and a project which in part attempts to deal with some of these problems. How is it possible to make a shared model of an imaginary social conflict, a revolutionary situation, when the everyday objects that provide a hidden factor of stability in social relations are – by virtue of their being constituted by the super-standardised models and associated behaviours afforded by a digital system – even more fundamentally reified, that is, fixed in terms of their potential use, than the physically solid objects they model?

How flexible is a digital object? You cannot reform a nuclear power station: the inherent danger and social implications of such a system mean that they should be dismantled. Such a technology provides one extreme, but what about an orange polythene traffic cone? Can you throw it, wear it as a hat, shout through it? Given this, how can you generate a computer model of an object and those it might come in contact with supple enough to afford such uses? To put it another way, how can you generate a software architecture supple enough that the programmer or game designer does not have to imagine all possible uses or scenarios, but allows them to emerge through the interactions of inventive users? How can objects be dumb enough to be complex?

Given that some form of simplification, reduction and exaggeration is necessary or at least inevitable, how can the startling lives of objects

when the world is turned upside down, their own propensities for turning and being turned, be made palpable? The game, it should be remembered, is not a simulation, and in its current prototype phase Spring_Alpha has an intriguing suggestion. Composed in a way that is explicitly modular, the landscape and artefacts of the housing estate in the game are to have their properties visible and manipulable, to have their properties and capacities emerge out of some mechanism of use. Every object, such as a traffic cone, factory, house, cop or plate of food will also include something along the lines of a patch familiar from audio and video manipulation programs such as Pure Data**[25]** or Isadora.**[26]** Patching systems supply a sophisticated means of representing functions, procedures and relations between elements. Each object is a box potentiated with functions and processes. The user creates a flow chart of boxes which function to generate simple, or vastly complex, interactions. Simon Yuill, who is leading the development of this project, expects much of the specific qualities of the program to emerge from workshops in which characters, street objects and buildings are assigned qualities to be remodelled as such 'patches'. Participants will work through the material culture of their surroundings and imagine their reinvention. The project is in the very early stages of development so the first version of this software will be the real point at which it can be substantially discussed, but as a model this promises to find one way of combining the synthetic powers of software with those of the social in a particularly compelling way.

This short, relatively naïve, account of the characteristics and interconnections of digital objects in these projects finds sustained and detailed work being done not simply on software itself, but on what it handles, what it is for, and what is involved in its production. Further work on the dynamics of the differentiation and conjunction of digital objects would take such an account into realms of intense detail. To intensify the power of such further developments it is essential that they also find a way through what seems at times like the seemingly unbearable, polyvalent weight of the societies that, along with Wojnarowicz, we have contracted.

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[25] **http://pure-data.sourceforge.net/**

[26] Isadora software is at **http://www.troikatronix.com**. Thanks to Scott de la Hunta for a demo of this work.

•Author : Sabeth Buchmann

•From systems-orientated art to biopolitical art practice

(from a talk first given at the Open Systems: Rethinking Art c. 1970 conference, Tate Modern, London, 17 September 2005)

Concerning the question which the curator Donna de Salvo raises in her abstract of the conference on Open Systems: Rethinking Art c. 1970**[1]** "How can we use the period of the 60s and 70s to rethink notions like open systems today?", I'll focus on the conceptual and technological 'rhetorics' and 'aesthetics' which are still relevant today to claims for more interdisciplinarity between art, science and new technologies. Three years ago, in their text 'Software Art', Florian Cramer and Ulrike Gabriel wrote about, "a shift of the artist's view from displays to the creation of systems and processes themselves".**[2]** This shift implies a transformation to a mode of production which traditional definitions of artistic practice no longer adequately describe. Keeping in mind the form of presenting instructions for action which has historically been so central to conceptual art, Cramer and Gabriel contest the assumption that there is a "generative code exclusive to computer programming" [in so doing, they extend a mathematical model of computer programming from the realm of technology to that of artistic practice]. The authors take, as an example, the immateriality of the work of Fluxus artist La Monte Young titled *Composition 1961, No. I, January I*. In Young's presentation of the written instructions to "draw a straight line and follow it," Cramer and Gabriel recognize a new, metaphysical, conceptual and epistemological tendency in art practice. They see this emerging practice as capable of transcending or moving beyond the confines of the object. Cramer and Gabriel find this tendency in other projects of historical significance such as the exhibition entitled Software – Information Technology: Its New Meaning for Art which was curated by artist and critic Jack Burnham in 1970 at the Jewish Museum in New York. Before curating this show, Jack Burnham had participated in several interdisciplinary projects at MIT. His show Software… also took place one year after the publication of Joseph Kosuth's 'Art after Philosophy'. Burnham's reference to Kosuth's controversial manifesto of Conceptual Art becomes obvious in the foreword of the catalogue. Building on Kosuth's references to structural linguistic theory, Burnham draws parallels between mathematical information theories**[3]** and conceptual art. The inherent similarities between conceptual art and

[1] Tate Modern, London, Sept. 16-19, 2005. See the webcast at **http://www.tate.org.uk/onlineevents/archive/OpenSystems**

[2] Florian Cramer/Ulrike Gabriel: 'Software Art': **http://www.netzliteratur.net/cramer/software_art_transmediale.html**

[3] His ideas were influenced by Ludwig von Bertalanffy's "General Systems Theory" (see the

mathematical information theory that Burnham sees mean for him a fundamental shift in the focus of art production from the traditional art object to a cultural, social and societally overlapping system of signs, one that eventually undermines the mythical structure of modern art.

Burnham's theory about the commonalities between conceptual art and the new information technologies was not only influenced by the work of Kosuth, but also by that of Lawrence Weiner, Robert Barry and Douglas Huebler – all of them artists who worked at that time with Seth Siegelaub. Siegelaub was a gallerist whose project was to redefine traditional forms of presentation, distribution and reception of art by curating shows in the format of catalogues and other print media.**[4]**

Burnham was very explicit in showing that it was Siegelaub's idea of integrating art and media that inspired his theoretical and curatorial work. For the illustration of his article titled 'Real Time Systems' published in *Artforum*,**[5]** Burnham chose a photo from Siegelaub's catalogue presentation. In his article, Burnham explained "systematics" as a new paradigm or model, in which the transformation of object production results in a system-oriented society. Burnham develops this position in the show Software as well as in his book *Beyond Modern Sculpture* published in 1968. As with other interdisciplinary projects in which he participated, his intention was to retell the history of modern art from the perspective of an emerging modern technology. Working from the assumption that art from the beginning of modernity had been seeking to move beyond the restrictive borders of matter, it was Burnham's thesis that modern sculpture would be replaced by what he called "life-simulation systems."**[6]**

The exhibition Software which he curated raised important and timely questions about the appropriate role of new technologies in society at large, at a time in the early '70s when these technologies were still reserved primarily for scientific development and military uses.

The computer subsequently found its way into the spheres of business and government, and soon after into private homes. The greater

conference papers by Luke Skrebowski 'All Systems Go: Recovering Jack Burnham's "Systems Aesthetics"' and Matthias Michalka's 'Antagonistic Systems' (unpublished).

[4] See for example Alexander Alberro, *Conceptual Art and the Politics of Publicity*, Cambridge, MA, 2003

[5] Jack Burnham, 'Real Time Systems' in *Artforum* Vol. 7*,* September 1969, pp 49-55 and 'Problems of Criticism' (1971), reprinted in Gregory Battcock, ed., *Idea Art*, New York, 1973, pp 46-69

[6] Jack Burnham, *Beyond Modern Sculpture*, New York 1968; see Rosalind E. Krauss' critique of Burnham's theories in her *Passages in Modern Sculpture*, Cambridge/London, 1994, pp 209ff.

accessibility of computers paved the way for the computer as a primary medium of information and communication, and later as a widespread consumer product. But, during the early stages of conceptual art, the computer had not yet become a part of everyday social and cultural experience. It is therefore even more noteworthy that by the middle of the '70s the possibilities of computer technology had managed to so capture the collective imagination. The popularity of cybernetic theories at this time was due in part to the role of Norbert Wiener's book *Cybernetics* which had been published in 1948, and was widely accepted by artists and theorists working in the field of conceptual art.**[7]**

The term "cybernetics" referred to what Norbert Wiener describes as a scientific approach that was concerned with control and regulation processes within dynamic systems. Wiener's theory introduced a mathematical model whose coordinates were constantly in flux. Each of these changes and its assigned numerical coordinate was re-integrated into the mathematical system and formed the matrix for further mathematical processes. Every system of regulation which uses such a model can be described as cybernetic, whether it is a weapons system or a description of chemical or biological processes. According to Wiener, cybernetics served as a supporting system of knowledge through which analogue connections or processes could be demonstrated. This could be extrapolated to include, for instance, the connections between missile defense systems, neurology and virtual reality technologies:

> For Wiener, the nervous system no longer appears as a single organ, which receives input from the sensory organs and delivers it to the muscles. Rather, many of its characteristic processes are only recognizable as processes of circulation, in which impulses pass through the nervous system to the muscles and then return again through the sensory organs to the nervous system.**[8]**

An example of the way in which theoretical models of this nature were received by artists and scientists can be found on the cover of the catalogue for

[7] Norbert Wiener, *Cybernetics, or Control and Communication in the Animal and the Machine*, Cambridge, MA, 1948

[8] See Wiener, quoted from German translation: *Kybernetik: Regelung und Nachrichtenübertragung in Lebewesen und in der Maschine*, Düsseldorf/Wien/New York/Moscow, 1992, p 34.

the Software show. The image is taken from an installation by Nicholas Negroponte and the Architecture Machine Group, a forerunner of the MIT Media Lab. This installation depicted a computer controlled, interactive environment composed of multiple small mirrored cubes. Edward Shanken described the work as an "intelligent architecture"**[9]** – one that was intricately connected with the habits and behavior of its inhabitants – in this case gerbils.

The cover and illustrations of the catalogue for the Software show demonstrated as early as the 1970 the surface elements of a new computer culture: complex and similar in design to today's computers, the images evoked a high-tech atmosphere. The catalogue also contained a didactic introduction to the newest computer technology as written by Theodore H. Nelson. His text, titled 'Computers are not what you think', seems intended to correct or contradict a cultural attitude toward computers that he perceived as false or pessimistic. Nelson's graphically illustrated explanation of the structure of a computer is written in a generally accessible way and apparently intended to promote the daily usefulness of the computer. The participation requested of the public, however, is reduced to a simple set of instructions for limited use, such as the entering of personal data into the machine Everything else remains in the realm of futuristic fantasy, as is indicated in a section of the text that reads, "Ways to program a display system to respond to user actions, or to time a presentation and show 'movies' must here be left to the reader's imagination".**[10]**

For the exhibition Software, Burnham had chosen works that could fit into the category of cybernetic feedback systems in the broadest sense. Edward Shanken later wrote of Burnham that he was not really concerned with selecting "works of art that demonstrated his theories".**[11]** It was rather the anti-hierarchical presentation of artworks alongside technical gadgets that formed the core idea of his curatorial concept. The differentiation between art and non-art was a distinction that for Burnham was to be left to the viewer to make. The Software show was neither meant to be a demonstration of engineering know-how, nor an art exhibition in the traditionally accepted sense. To a certain extent, the show presented the findings or results of artistic involvement within a

[9] Edward A. Shanken, 'The House That Jack Built: Jack Burnham's Concept of 'Software' as a Metaphor for Art', **http://www.duke.edu/giftwrap/House.html**

[10] Theodore H. Nelson, 'Computers are not what you think' in *Software: Information Technology: Its New Meaning for Art*, exhibition catalogue. The Jewish Museum/ The Smithsonian Institution, New York and Washington, New York, 1970, pp 66f.

[11] See Shanken, ibid.

framework of contemporary issues of control and communication technologies. As Burnham himself wrote:

> In just the past few years, the movement away from art objects has been precipitated by concerns with natural and man-made systems, processes, ecological relationships, and the philosophical-linguistic involvement of Conceptual Art. All of these interests deal with Art which is transactional; they deal with underlying structures of communication or energy exchange instead of abstract appearances. For this reason most of Software is *anti-iconic*; its images are usually secondary or instructional while information often takes the form of printed materials. In such forms information processing technology influences our notions about creativity, perception, and the limits of art. Thus it may not be, and probably is not, the province of computers and other telecommunication devices to produce art as we know it; but they will, in fact, be instrumental in redefining the entire area of aesthetic awareness.**[12]**

Burnham was apparently not of the opinion that information technologies would play a dominant role in advancing or determining the actual production of art; he declared them rather as new forms of cultural and aesthetic perception. According to Burnham's argumentation, the consequence of such changes would be the re-evaluation or re-classification of the artist from a producer of objects to a mediator of ideas and their communication. Yet at the same time, his vision of the role of the artist retained notions associated with the traditional attributes of a creator or producer of original artworks, insofar as the artist was expected to find creative and innovative or "new" ways in which to use the emerging information technologies.

And – ironically – the Software exhibition is one example of the phenomenon in which conceptual art was institutionalized by and incorporated into the museum structure at exactly the same time as it was calling for a de-institutionalized system. But such problems were recognized even by those artists who had turned away from an object-centered mode of production. In her 1969 interviews with Robert Barry, Douglas Huebler, Sol LeWitt, Robert Morris, Robert Smithson, Lawrence Weiner and Siegelaub, the artist Patricia Norvel confronted these artists with Burnham's theories. Interestingly enough, they appeared unimpressed

[12] Jack Burnham, 'Notes on art and information processing', in *Software...*, ibid., pp 0-14, here p 10

or uninterested in Burnham's application of system theories. When interviewed by Norvell, they indicated either, as with Huebler, that they were unfamiliar with the ideas or, as with LeWitt and Smithson, they argued that the object was and would continue to play an important role in artistic production. While LeWitt explained that, "people that do objects, in many cases, do them with a system in mind",[13] Smithson described systems as merely extensions of the object or "expansive objects".[14] The responses from LeWitt and Smithson can be recognized as an indication that they saw these theories of paradigmatic change as nothing more than an implementation of new terms into a field of traditional object-based categories. Smithson made this more explicit when he attributed a utopian perception of modernistic progress to Burnham:

> It's another abstract entity that doesn't exist. I mean there are all these things... there are things like structures, objects, systems. But then again, where are they? I think art tends to relieve itself of those hopes. Like, last year we were in an object world and this year we're in a systems world. Well, Jack Burnham is very interested in going beyond and that's a kind of utopian view.[15]

With his labelling of Burnham as utopian, Smithson made it clear that Burnham's concept of technology had become inseparable from the ideology of modern art and that a mode of cultural production that took as its subject matter the topics of knowledge, communication, information, or even the broader category of speech had to be careful not to become an unwitting agent of scientific and technical progress at the expense of art and/or artistic freedom.

Following Smithson's reasoning, the self-reflexive system and the decentralization of the object lead not only to a relativising of the idea of artistic production. These changes also lead to a complete emptying of the societal meaning of production. Thus within a fully integrated cultural system the audience becomes a producer, but only to consume their own participation as a product. This dynamic becomes a cultural paradigm.

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[13] Patricia Norvell, Sol LeWitt, 12 June 1969, in Alexander Alberro and Patricia Norvell, eds., *Recording Conceptual Art. Early Interviews with Barry, Huebler, Kaltenbach, LeWitt, Morris, Oppenheim, Siegelaub, Smithson, Weiner by Patricia Norvell*, Berkeley and Los Angeles, 2001, pp 112-123, here p 120.

[14] Norvell, Robert Smithson, 20 June 1969, in Alberro and Norvell, ibid., pp 124-134, here p 133

[15] Ibid.

Looking at conceptualism historically, it appears that it is exactly this tension between object- versus system-oriented production which somehow resulted in both a resistance to or rebellion against the art market and, at the same time, a more or less ambivalent complicity and engagement with its integration into an imminent corporate culture. This becomes visible in the discourse of the exhibition catalogue for Software. Obviously the participation in a communication, information, and knowledge-producing system requires of the artist new strategies for representation and self-representation. The suggested form of participation goes with a transformed understanding of artistic competence, in which resources such as communication and information skills and access to a knowledge base play a significant role. Fax machines, TV, radio and cybernetic environments are as much a part of the exhibition as technical demonstrations and secondary or accompanying communication such as artists in discussion with engineers, trustees, managers, chairmen of corporations, museum organizers and visitors.

If we agree that there were corresponding developments in economic, societal and artistic fields around 1970, the question becomes whether or in which ways a socially dominant business model evolving away from the Ford style assembly line production affected the development of artistic practice. How are characteristics that we see in the economic and job sector such as flexibility, mobility, just-in-time production and so forth carried over into art production and its technologically-oriented forms of reception?

An important aspect of the media theory of that time was its focus on social control. In 1976, the sociologist Jean Baudrillard analyzed this process as a transition from a society based on production of goods to one based on a production of signs, which he labelled a “semiocracy”. For Baudrillard, the role of the new communication and information technologies is demonstrated in the differences between “imitation” (during the classical era), “production” (in the industrial age), and “simulation” (in the information age).**[16]**

Here, Gilles Deleuze’s ‘Postscript to Societies of Control’ can offer a further interpretation by introducing questions of whether the transition between a “disciplinary society” to a “society of control”, which partly correlates with the transition from fordism to postfordism, is a phenomenon which is of importance for the historical understanding of the correspondences between conceptual art and system-oriented practices:

[16] Jean Baudrillard: *Der symbolische Tausch und der Tod*, München, 1982, pp 24f. (in the French original: *L’échange Symbolique et la Mort*, Paris 1976).

> In the disciplinary societies one was always starting again (from school to the barracks, from the barracks to the factory), while in the societies of control one is never finished with anything – the corporation, the educational system, the armed services being metastable states coexisting in one and the same modulation.**[17]**

Deleuze sees a similar change in the status of the art object, when he writes "that even art has left the spaces of enclosure in order to enter into the open circuits of the bank".

But those analogies of economic, societal and cultural developments were not only of a theoretical nature at that time, but were also re-stated when conceptual art had its revival in the end of the 1980s. This was a period when – under the influence of Niklas Luhmann and the media discourses of postmodernity – system theory was of great importance within so called 'media art' as well as in the so called 'context art'. I quote Mel Ramsden from an interview with Mary Anne Staniszewski in *Flash Art*:

> Conceptual art was the first upwardly mobile art. It moved artists into the same role, into the same space, as that of the managers and curators. And it seemed that what you had to do was to make a kind of space where you could produce work which was not simply and automatically part of that system (Mel Ramsden, 1988).**[18]**

This quote from Ramsden alludes to the growth of a fully self-referential and enclosed art system, and raises the question of whether the implementation of conceptual art into a capitalist system of signs and meaning was not from the beginning an insuperable contradiction of the movement. It reveals the conflict between conceptual art's stated goals and its attempt to meet the requirements of, or respond adequately to, a modern information and knowledge-based corporate culture and art market. Against this theory of a causality or even complicity between art and economy, one could postulate that, with conceptual art, a new mode of production was introduced, one that sought to define its own economic rules. These rules wanted to take into account or even

[17] Gilles Deleuze, 'Postskriptum über die Kontrollgesellschaften' in *Unterhandlungen 1972-1990*, Frankfurt an Main, 1993, pp 254-262 (in the French original *Pourparlers 1972-1990*, Paris 1990.

[18] Mel Ramsden, interview with Mary Anne Staniszewski, 'Interview: Alternatives to Critical Theory and a Corrosive Irony', in *Flash Art*, 139, March/ April 1988, pp 106-107, here p 107.

incorporate, while at the same time challenging, the illusionary characteristics of the mass media and its accompanying information age.

Looking at the Software show, this meant that the artist was situated in a much wider and more abstract frame of reference than the studio, gallery and museum could offer. The loss of meaning (even if only temporary) which the object-oriented process of production suffered through changes in strategies of distribution, resulted in a shift and expansion of artistic production into a technological realm. This then required other, more media-dependent and media-conscious self- promotion strategies than those that had been needed by artists who understood themselves exclusively as creators or authors of art objects.

In light of this, one can take a look at the concept of postfordist production analyzed in Michael Hardt and Toni Negri's book *Empire*, one which lets us describe the main goal of the artist as that of a bio-political producer in terms of a new type of entrepreneur and manager:**[19]** it is his or her ambition to extend his or her territory to sectors of society which are traditionally associated less with production than with reproduction. It is relevant then to ask whether the convergence of conceptualism, new technologies and system theory actually contributed to the building of the "social factory" which Hardt and Negri describe as an enlargement and modification of factory- oriented labour. The "social factory" is a form of production which touches on and penetrates every sphere and aspect of public and private life, of knowledge production and communication.**[20]**

A similar approach to certain factors at play in conceptual art can be found in the writings of Jeff Wall. In his essay on Dan Graham's work, the artist and writer deals with the work of several conceptual artists, particularly that of Kosuth. For Wall, these works presented the elements of "value-free" academic disciplines (such as empirical sociology, information and media theory, and positivistic linguistics) in the trendy style of 60s advertisements. For Wall, conceptual art was clarifying or forcing the point that, "in many works explicitly the university system as well as the media monopolies, after having been cleansed of Marxism during the cold war, had become the primary support systems for the new art, and were anchored, as were the artists themselves, in structures of authority and knowledge, whose cognitive constructions, even their epistemology, was publicity".**[21]**

[19] See Michael Hardt and Antonio Negri, *Empire*, Harvard University Press, Cambridge, MA, 2000, p. 28.

[20] See Michael Hardt and Antonio Negri, *The Labor of Dionysus: A Critique of the State Form*, University of Minnesota Press, Minneapolis, 1994.

[21] Jeff Wall, "Entwurf zu ‚Dan Grahams Kammerspiel", in Gregor Stemmrich, ed. *Jeff Wall, Szenarien im Bildraum der Wirklichkeit. Essays. Interviews*, Dresden, pp 47-88, here p 63f.

To return to Donna de Salvo's question quoted at the beginning, we can find within it a starting point for a productive re-evaluation of system-oriented forms of thought and practice in the 60s and 70s. It is useful to note that the establishing of a context for decentralized work, which bridges the traditional categories of art and institution, media and marketing, knowledge and the academy is also re-examined in the ambivalent concept of the biopolitical producer. The image of the critical and yet at the same time constantly productive, non-stop artist has been formed by increasingly co-existent practices of holding lectures, printing newspapers, curating exhibits, establishing off-spaces, self-organized galleries and museums and generally taking the business of art criticism into one's own hands.

Yet in spite of the negative dialectics implicit in this process, the search continues for a better model. Such a model needs to be able to both call into question and survive an art market which is profoundly influenced by corporate power. In light of this, the show Software. Information Technology and Its New Meaning for Art was able to effectively touch significant questions concerning the relation between the new technologies, art market and corporate culture – something I miss in the regular business of art criticism and art history of today.

• Author : Michael Corris

• Recoding of Information, Knowledge and Technology

The following examines how some Conceptual art recoded, redescribed and ironized the theories that helped to drive and justify the technological revolution of the 1960s.**[1]** At the outset, we should note the intense interaction during the 1950s and 1960s between the modernizing discourse of technology and all forms of culture and visual art. Indeed, the emergence during the 1960s of Conceptual art coincided with a tremendous surge in economic activity in North America and Western Europe that "seemed powered by technological revolution".**[2]** John F. Kennedy's "new frontier" and Harold Wilson's "white heat of technology" were images that were intended to denote and exploit the appeal of technological innovation in the mind of the electorate.**[3]**

Writing on the period of post-war prosperity that began in the US in 1945 and reached its peak around 1970, historian Eric Hobsbawm offers three observations on the distinctive social and economic effects of this technological leap. Firstly, the utter transformation of everyday life in the industrialized nations and, to a lesser extent, in the developing world; secondly, the new centrality of 'Research and Development' (R&D) to the economic growth of the industrialized nations; and thirdly, the structural effect on the labour market of the new, capital-intensive technologies. It is this last feature that prompted the period's technocrats to dream of "production, or even service, without humans" and to speculate on the prospect of human beings as "essential to such an economy only in one respect: as buyers of goods and services".**[4]** Even though the "restructuring of capitalism and the advance in economic internationalization" are probably more central to our understanding of this broad period of economic expansion, it was the image and promise of technology – in particular, the view of a radically reduced concept of the human being as social agent – that captured the intellectual, popular and artistic imagination of the West. In the United

[1] The genetic relationship of Conceptual art to the administrative processes that drive post-industrial capitalism is a matter of some debate. The point I wish to stress here is that mannered administrative processes — in Conceptual art practice this includes, among other activities, form-filling, compilation of detailed inventories, objectification of social and biological processes and the repetition of fixed routines — are no longer administrative processes as such. This is the point that Benjamin Buchloh fails to appreciate when he condemns some Conceptual art as complicit with the bureaucratized worldview of late-capitalism.

[2] Eric Hobsbawm, *Age of Extremes: The Short Twentieth Century, 1914-1991*, Michael Joseph Ltd., London, 1994, p 264.

[3] Arthur Marwick, *The Sixties: Cultural Revolution in Britain, France, Italy, and the United States, c. 1958-c.1974*, Oxford University Press, Oxford, 1998, p 248.

[4] Hobsbawm, *Age of Extremes*, pp 265-66, 267.

States, the development of technology and the dissemination of the technocrat's dream of a regimented society of consumers was fuelled, on the one hand, by the growing power and influence of corporations and, on the other, by the "military-industrial complex". The marriage of Cold War foreign policy and private sector enterprise sustained America's military advantage and guaranteed a steady flow of resources to support appropriate technological developments. Alongside the many programs initiated to develop weaponry and communications systems, a parallel stream of research funding was made available to disciplines such as linguistic theory and pure mathematics. These fields of theoretical research were the recipients of strategic State funding, which aimed to steer the production of knowledge into avenues that might yield results applicable to the future development and production of high-speed electronic computing machines, electronic communications systems, exotic new weapons, powerful information processing programs, and encryption devices. Many of the innovators in the field of game theory, information retrieval, modal logic and transformational grammar pursued initial research under the aegis of this rich stream of State and NATO-sponsored funding.

During the 1960s such theories dominated the intellectual landscape and quickly became the object of social and political controversy. Systems theory in particular gripped the 1960s imagination. Typically associated with the aims and objectives of the military or corporate management, systems theory was first promoted in a generalized form "capable of addressing patterns of human life" by the mathematician and inventor of cybernetics, Norbert Weiner. Cybernetics – conceived by Weiner during the 1940s in the context of military research on improved radar systems – is essentially a theory of control based on the concept of the feedback loop, whereby a system is in a state of dynamic monitoring and adjustment of its performance with respect to a specified goal. According to Weiner, "the physical functioning of the living individual and the operation of some of the newer communication machines are precisely parallel in their analogous attempts to control entropy through feedback".**[5]** The biological analogue to cybernetics is homeostasis, the processes through which an organism is able to maintain itself in a state of dynamic equilibrium with its environment.

The concept of a "system," which became part of the *lingua franca* of the 1960s, was not destined to remain the exclusive property of a technologically minded elite of engineers, scientists and mathematicians. In the hands of intellectuals, artists and political

[5] Norbert Weiner, *The Human Uses of Human Beings*, Avon Books, New York, 1954, p 38.

activists, it would become an essential ideological component of the "cultural revolution". It is generally agreed, for example, that Robert Smithson's obsession with inorganic molecular structures (crystals), geological processes, time, and entropy – the latter being a concept derived from classical thermodynamics but also performing a central role in communication theory – represented a strong cultural challenge to technology's progressive self-image. The British art critic Lawrence Alloway likened the production, distribution and consumption of art to a non-hierarchical network, "a shifting multiple goal coalition", and supported his claim by citing the work of industrial psychologists and sociologists.[6] Systems theory also figured prominently in the student revolt of the 1960s. Historian Howard Brick argues that "by the late 1960s students in American universities and colleges easily grasped the concept of a 'system'".[7] In the volatile atmosphere of confrontation with the Establishment, the term itself – which simply denotes the "orderly processes at work in any complex array of multiple, interacting variables, be it a living organism, an environmental milieu, or a computing machine" – would be demonized. The meaning of the term "system" was highly inflected politically and its application to the flux of human affairs or the natural environment was strongly contested. Opposing or counter-culture meanings of system theory typically emphasized a consciousness of "'connections' among diverse social problems" indicating that "the flaws in society were fundamental, endemic – not incidental".[8] Despite its origins in the field of weapons research, social activists, environmentalists, student radicals and artists appropriated the term and used it to effectively polarize social discourse.

What was art's response to a set of technocratic theories, ideologies and new structures of intellectual production (such as the "think tank") that seemed to be committed collectively to the transformation of people into objects of "technical and administrative measures?"[9] Not all artists believed that such knowledge and technology was indelibly tainted. In the visual arts, some practitioners were more inclined to celebrate technology and to read the growing influence of the social sciences as a sign of society's rapid modernization, a future imagined as "a technologically utopian structure of feeling, positivistic and

[6] Lawrence Alloway, 'Network: The Art World Described as a System', *Artforum* XI, 1 September 1972, p 29.

[7] Howard Brick, *Age of Contradiction: American Thought and Culture in the 1960s,* Cornell University Press, Ithaca, NY, 2000, p 124.

[8] Ibid., pp 124-125.

[9] Theodor Adorno, *Minima Moralia*, Verso Press, London, 1985, p 56.

'scientistic".[10] These artists sought to emphasise how the enlightened application of these new social and scientific theories – particularly semiotic theory, whose dream "had been the quest for inter-disciplinary forms, which would cross different types of human forms of expressions"[11] – could achieve socially progressive ends. Roy Ascott established his innovative "Ground Course" at Ealing College in 1961 in the hope that a reorientation of art education informed by cybernetics, semiotics, and other theories of communication would form the basis for a new visual sensibility. The enthusiasm displayed by Ascott for graphic notations as diagrams of a "new space" had its counterpart in the American field of Conceptual art, which Robert C. Hobbs characterizes as the aestheticization of knowledge and the fetishization of "quasi-scientific" (objective) modes of display.[12] In 1967, the British artist Stephen Willats argued that intellectual resources drawn from "modern information areas" such as psychology and communication theory would enable the artist to "look at such important issues as audience composition", and the relation between the concerns of art and those of its audience. Willats envisaged a practice of art that "structured function as an integral part of the environment".[13] In 1971, he wrote that "the development of homeostatic, self-regulating, self-assessing systems has been one of the most important conceptual developments in respect of behavioural structures, for it is in the nature of these systems that they are capable of determining their own structural relationship between input and output".[14] Such rhetoric, of course, can be applied as well to the operations of a modest thermostat. Yet, we are able to point to vivid and complex examples of artists adopting the strategies and intellectual resources that commonly characterize the culture of corporate research and development or policy institutes. For example, the reconfiguration of the "think tank" and the modern corporate figure of the management consultant were drawn upon respectively by Robert Smithson and the British artists John Latham and Barbara Stevini, co-

[10] David Mellor, *The Sixties Art Scene in London*, exh cat. Barbican Art Gallery, 11 March - 13 June 1993, Phaidon Press, London,1993, p 107.

[11] Ibid., p 112.

[12] Robert C. Hobbs, 'Affluence, Taste, and the Brokering of Knowledge: Notes on the Social Context of Early Conceptual Art', in Michael Corris, ed., *Conceptual Art: Theory, Myth, and Practice*, Cambridge University Press, Cambridge, 2004, pp 200-223.

[13] Stephen Willats, 'Statement', 1967, reprinted in Clive Phillpot and Andrea Tarsia, *Live in Your Head: Concept and Experiment in Britain 1965-75*, Whitechapel Art Gallery, London, 2000, p 161.

[14] Stephen Willats, 'Behavioural Nets and Life Structures', *The Paper*, no. 1, 1971.

founders in 1966 of the Artists Placement Group.**[15]**

Other artists undoubtedly took a more benign approach to the concept of a system, using it to denote a set of parameters or rules that can impart the image of structure and motive to artistic practices that are invariably performative and contingent. Such work was constituted through moments of social encounter and interaction, rather than through the disposition of materials. The concept of a template or schema – already familiar to Conceptual art, as the work of Dan Graham, Sol LeWitt, Hanne Darboven, Douglas Huebler and On Kawara attests – provided an armature on which to organize a variety of social scenarios. Examples include Lee Lozano's *Dialogue Piece* initiated in 1969, and some of the early projects of Vito Acconci. Acconci – not ordinarily associated with systems theory as such – organized performances in the late 1960s that placed the person of the artist into a pre-existing situation or social circuit, "something that already existed".**[16]** Acconci's contribution to the Museum of Modern Art's 1970 exhibition Information was a structured performance that the artist described as a "mail system-museum-exhibition-system". Other works by Acconci, such as his solitary physical self-improvement performances, display an absurdist tinge linking him with artists who were far more interested to undermine the social authority of systems theory through parody, pushing the application of a system to the point of absurdity. Systems theory, cybernetics and game theory were misrepresented and diminished by a strategy of over-generalization whereby the most banal situations of everyday life would be subjected to isolation, rationalization, and analysis in a travesty of corporate efficiency or military control. One example is the early work of David Askevold – *Three Spot Game* (1968), *Shoot Don't Shoot (A Sum Zero Game Matrix)* (1970), and *Taming Expansion* (1971) – which is consciously modelled after a simple game theory decision matrix.

The holistic insight that all systems, regardless of size or complexity, are interconnected lurks at the heart of systems theory. This insight was mercilessly exaggerated to the point of paranoia in the novels of Thomas Pynchon, such as *The Crying of Lot 49* and *V*. Earlier, Len Deighton's *The Ipcress File* – the 1962 literary debut of an ex-Royal College of Art student turned novelist – anticipated "the synthesised

[15] Michael Corris, 'From Black Holes to Boardrooms: John Latham, Barbara Steveni and the Order of Undivided Wholeness', *Art+Text* 49, September 1994.

[16] Martin Kunz, 'Interview with Vito Acconci About the Development of his Work Since 1966', in Marianne Eigenheer, ed., *Vito Acconci,* Kunstmuseum Luzern, Luzern, 7 May - 11 June 1978, unpaginated.

environment of technological fantasy only so far as the severely bureaucratic, hierarchical and class aspects of British culture would permit".[17] Even the influential work in America of George Brecht and John Cage – which Robert Morris characterized in the late-1960s as the "final secularization" of art and systems of chance – may be read as an indictment of technocratic and bureaucratic modalities of control.[18] It was a defiant statement of the poverty of such a world-view, a warning about the hubris of all attempts to overcome indeterminacy, and an encouraging sign that led to the innovation by some Conceptual artists of more explicitly "democratically" structured artworks and situations.

The engagement of Conceptual artists with systems theory, information theory, cybernetics, and electronic technology had a real basis in ideological and social conflict, though at times it seemed to be the result of contingency. Jack Burnham argues that Hans Haacke "wanted to reveal the way the world functions on its most essential levels".[19] Haacke took as his subject matter the totality of all systems, regardless of their nature as physical, biological, or social, though his work before around 1968 concentrated on the first two categories. Haacke's central artistic strategy has been defined as the "production of systems, the interference with and the exposure of existing systems".[20] He is concerned with the "operational structure of organizations, in which transfer of information, energy, and/or material occurs".[21] Fredric Jameson has compared Haacke's methodology to homeopathy, writing that the artist "poses the political dilemma of a new cultural politics: how to struggle within the world of the simulacrum by using the arms and weapons specific to that world which are themselves very precisely simulacra".[22] Provoked by the assassination of Martin Luther King in 1968 and referring to the utility of so-called "political art", Haacke

[17] Mellor, *The Sixties Art Scene in London*, p 110.

[18] Robert Morris, 'Some Notes on the Phenomenology of Making', *Artforum* VIII, 8, April 1970.

[19] Jack Burnham, 'Hans Haacke's Cancelled Show at the Guggenheim', *Artforum* IX, 10 June 1971.

[20] Ibid.

[21] Ibid.

[22] Fredric Jameson, 'Hans Haacke and the Cultural Logic of Postmodernism', in *Hans Haacke: Unfinished Business*, The New Museum of Contemporary Art, New York, 1986, pp 42-43. Jameson notes that "such a strategy – even conceived provisionally – has little of the vigorous self-confidence and affirmation of older political and even proto-political aesthetics, which aimed at opening and developing some radically new and distinct revolutionary cultural space within the fallen space of capitalism. Yet as modest and as frustrating as it may sometimes seem, a homeopathic cultural politics seems to be all we can currently think or imagine". p 43.

expressed the belief that "the production and the talk about sculpture has nothing to do with the urgent problems of our society . . . we must face the fact that art is unsuited as a political tool".[23] The artist stressed that "any work done with and in a given social situation cannot remain detached from its cultural and ideological context".[24]

Haacke's challenge to the perceived ethical constraints imposed on art by a particularly narrow sense of professionalism is enabled, in large measure, by an embrace of systems theory and systems "thinking" In particular, it is the concept of an ecosystem that is most relevant to Haacke's projects of the early 1970s, imparting a sense of structure and coherence on works such as *10 Turtles Set Free* (1970) and *Goat Feeding in Woods, Thus Changing It* (1970). *Beach Pollution* (1970) – a pile of driftwood and other rubbish that had been collected on a Spanish seafront – not only signals Haacke's concern with environmental issues, but also initiates a dialogue with the anti-formalism of the late 1960s. Visually, *Beach Pollution* is a work that seems to invite an experience of "unmediated physical encounter with matter, an encounter unfettered by language and *a priori* assumptions"[25] similar to that intended by Robert Morris in his work *Threadwaste* (1968). Yet, what distinguishes Haacke's work is not its physical composition as a pile of scavenged rubbish; rather, its conceptual relationship to the *exogenous* cultural space of the emerging environmental movement. That such a difference is not available to visual inspection, but is constituted through language, marks a significant shift away from the phenomenological claims of Minimalism.

* * *

Conceptual art's critique of Modernism was "frequently expressed in terms of a desire for art to emulate the intellectual rigor of academic disciplines and took the form of fetishized modes of the scientific display of knowledge". In his essay "Affluence, Taste, and the Brokering of Knowledge: Notes on the Social Context of Early Conceptual Art", Robert C. Hobbs examines "this anxious intersection of art with a particularly influential vision of post-war American society". Hobbs's text distances itself from accounts of Conceptual art that seek its origins in an aesthetic response to Minimal art or which claim that all Conceptual art was conceived in opposition to the cultural values of mainstream American culture. Hobbs argues convincingly against these monolithic

[23] Hans Haacke to Jack Burnham, correspondence, 10 April 1968.

[24] Ibid.

[25] James Meyer, *Minimalism: Art and Polemics in the Sixties,* Yale University Press, New Haven, 2001, p 267.

views, pointing out, for example, how a reductive form of Conceptual art – exemplified in the work of Joseph Kosuth – complemented a contemporary taste for uncluttered simplicity, an aesthetic the author identifies with an interest in quasi-Japanese interior design. In common with Minimal art, some aspects of Conceptual art always seemed to be at risk of falling back into a comfortable relationship with the culture at large. This is not to say that those aspects of Conceptual art which are redolent of the logic and visual appearance of administrative systems are necessarily complicit with the aims and objectives of late-capitalist society. Rather, it may have been the case that some forms of Conceptual art learned the lessons of Pop Art too well, succumbing too readily to a fascination with taste, fashion, and the media from the vantage point of the cultural space of "high" art. "Instead of feigning an elaborate costume when actually undressed", writes Hobbs, "this new art assumed the camouflage of the commonplace which made it appear dematerialized".**[26]** Hobbs argues against the notion of Conceptual art as a practice primarily concerned with the creation of a type of meta-art; instead, he prefers to map its aesthetic onto a number of broader social shifts in middle-class taste that took place during the 1960s. By doing so, Hobbs illuminates a set of social, economic and ideological conditions that were common to both American and British artists.

Briony Fer's analysis of the early work of Hanne Darboven produced in New York between 1966 and 1968 elaborates upon Alex Alberro's claim that the work of Conceptual art "takes the form of structure rather than object". But it does so in quite a different spirit, in order to do justice to the actual appearance of the work and raise further questions about the problem for interpretation introduced by seriality, repetition, and a reflection on archaic systems of information. In 'Hanne Darboven: Seriality and the Time of Solitude', Fer notes that her interest in Darboven – essentially a producer of a species of "outsider" art – was prompted by the products of such a thoroughgoing "negation of the visual" as conceived within Modernism. Because of this, Fer is keen to explore the way in which the visual effects of Darboven's work remains a problem for both the "Modernist model of surface against which this work deliberately set itself" and "later protocols for thinking about Conceptual art, with the emphasis that has tended to be laid on its rigors and critical relentlessness".**[27]**

[26] Hobbs, 'Affluence, Taste, and the Brokering of Knowledge', p 200.

[27] Briony Fer, 'Hanne Darboven: Seriality and the Time of Solitude', in Michael Corris, ed., *Conceptual Art: Theory, Myth, and Practice*, Cambridge University Press, Cambridge, 2004, p 223.

For Fer, the compelling feature of Darboven's work is the central presence of repetition and seriality. Again, we see how Conceptual art responded to and reshaped some of the principal concerns associated with the practices of Minimalism and used them to produce markedly different effects. Fer appreciates this dynamic historical relationship and is therefore less interested in interpretations that index Darboven's work to the serial production of the commodity and its link in art to the ready-made. Rather, Fer is more concerned with "what gets made out of the work of cancellation that seriality, in Darboven's work in particular, so effectively stage". Fer argues that "While serial repetition has tended to be thought of in terms of an impersonal, even objective form of arrangement, the concern is with subjectivity and what kind of subjectivity might be at stake in Darboven's seriality". Fer's project, then, is to provide an account of some types of Conceptual art in terms of a "psychic and social subject". She does this through a contextualization of Darboven's work in terms of the practices of LeWitt, Mel Bochner, Carl Andre and Dan Flavin. Her text also tackles the "more heterogeneous, or strange, or unorthodox aspects of Conceptualism to which the work of Darboven testifies". Interestingly, Darboven's reliance on systems is refracted through the work of Johan Jacob Moser, an obscure Southern German jurist and writer who proposed an early filing system of cataloguing references. Darboven writes that a system was necessary to enable her to "find something of interest, which lends itself to continuation".**[28]** And while the "serial procedure works by addition or reduction, placing elements in succession according to a system that may or may not be extended *ad infinitum*", Darboven's arrays "have the effect of squeezing out space and so make temporality do the work". It is duration – "the kind of time that just goes on" – that "threatens the instantaneity of aesthetic experience that had been promoted as the moment of Modernist conviction".**[29]**

In his essay 'Art in the Information Age: Technology and Conceptual Art', Edward Shanken suggests that the historical divergence, if not antagonism, between Conceptual art and technologically-based art represents a serious misunderstanding on the part of artists and critics which resulted in a missed opportunity for fruitful artistic collaboration. Shanken seeks to "re-examine the relationship between technology and Conceptual Art and to challenge the disciplinary boundaries that obscure significant parallels between Conceptual Art and Art and Technology".

[28] Hanne Darboven, 'Artists on their Art', *Art International* vol. 12, April 1968.

[29] Fer, 'Hanne Darboven', p 230.

In this regard, Shanken's example of the seminal work of Roy Ascott is perspicacious. As Shanken notes, "Art and Technology was perceived by many artists, critics, and historians, as weighted down by, in LeWitt's words, the 'physicality of the materials' which dominated the 'idea of the work'".[30] Citing Ursula Meyer's remark that "Conceptual Art is diametrically opposed to hardware art",[31] Shanken examines the substance of the criticism by Conceptual artists directed at "art and technology". Terry Atkinson's writings on the work of David Bainbridge and Harold Hurrell, for instance, reveal some of the real social and cultural differences that prevented a full-blown exchange of knowledge between these two fields. Despite a common interest in the concepts of feedback and control – discourses which were central to the new image of technology – Bainbridge asserted the "importance of the unimportance" of the work as bits of engineering. Atkinson argues that Bainbridge and Hurrell's approach to art and technology is one where art produces engineering, rather than the reverse, and is dedicated to producing works that cannot be slotted unproblematically into the visual art tradition.[32] In works such as Hurrell's *Fluidic Device* (1967) or in essayistic speculations like Bainbridge's *M1* (1969), technology and its "referential discourse" – cybernetics and so forth – serves as "analogical source material". The point being that "one respects one's analogues and their inherent limitations but one is not offering the source's attributes *per se* to be marvelled at".[33]

While Conceptual artists and "art and technology" artists might have imagined that they existed in two different worlds, Shanken's research reveals that the referential discourses of indexing, information storage and retrieval – so crucial to Art & Language's projects of the first-half of the 1970s – were first presented publicly by Jack Burnham in the context of his 1970 survey of art and information, Software (1970, The Jewish Museum, New York). Burnham – whose critical writings on art of the 1960s and early-1970s did much to promote Conceptual art, Earthworks and art and technology as well as advance a political reading of those practices in terms of the late theories of Herbert

[30] Edward Shanken, 'Art in the Information Age: Technology and Conceptual Art', in Michael Corris, ed., *Conceptual Art: Theory, Myth, and Practice,* Cambridge University Press, Cambridge, 2004, p 245.

[31] Ursula Meyer, *Conceptual Art*, Dutton Press, New York, 1972, pp xvi.

[32] Terry Atkinson, 'Concerning Interpretation of the Bainbridge/Hurrell Models', *Art-Language* vol. 1, no. 2 , February 1970, p 68.

[33] Harold Hurrell, 'Notes on Atkinson's 'Concerning Interpretation of the Bainbridge/Hurrell Models'', *Art-Language* vol 1, no. 2, February 1970, p 73.

Marcuse[34] – is a central figure in Shanken's account. Burnham's writing, especially texts published in *Artforum* during the late 1960s and early 1970s, found a sympathetic audience among many artists and art students. His influence peaked with the publication in 1970 of *The Structure of Art*, in which the structuralist theory of Claude Lévi-Strauss was applied to a canonical selection of twentieth century avant-garde works of art. Critic and art historian Johanna Drucker further explores the convergence of information theory, communication theory, and Conceptual art in 'The Crux of Conceptualism: Conceptual art, the *Idea* of Idea, and the Information Paradigm'. By information paradigm, Drucker means "the theorization of information both as a quantifiable discipline and an idea that has relevance across a broad spectrum of economic and cultural activities".[35] In her view, the exhibitions Information (1970, The Museum of Modern Art, New York) and Software were not simply efficient vehicles for the institutional and uncontroversial introduction to a general public of Conceptual art. They were exhibitions that could be understood as describing and underscoring the ideological ground that is shared between a new mode of artmaking and the emergent sciences of data processing and systems control.[36]

Drucker contends that the elimination of the "indexical connection between idea and execution" characteristic of Conceptual art was a defensive reaction motivated, in part, by the recognition that the cultural space of high art was shrinking. The priority of "conceptual values" which Conceptual art attributes to its work enables it to retain its cognitive status as high art, yet "marks the end of Modernism as a mode of aesthetic production". Thus, "Conceptual art may be said to have invented a response to the cultural forces that might have otherwise obliterated fine art practice". Responses of this order include Kosuth's formulation "art as idea as idea", which Drucker then compares with the

[34] Burnham writes that "one common assumption holds that 'humanist' values — sensitivity, self-expression, meaningfulness — have been banished from art. It would be more accurate to say that they have been lifted from the context of important idealism and directed towards the shaping of reality *per se*. Marcuse phrases it best, '. . . the realization of art as principle of social reconstruction *presupposes* fundamental social change. At stake is not the beautification of that which is, but the total reorientation of life in a new society". See Jack Burnham, *Art in the Marcusean Analysis*, No. 6 Penn State Papers in Art Education, Paul Edmonston, ed., Pennsylvania State University, Philadelphia, 1969, p 21.

[35] Johanna Drucker, 'The Crux of Conceptualism', in Michael Corris, ed., *Conceptual Art: Theory, Myth, and Practice*, Cambridge University Press, Cambridge, 2004, p 251.

[36] Ibid., p 251.

practices of Lawrence Weiner, Mel Bochner and John Baldessari. While the latter three are among those artists who contributed to an "examination of the relationship that might be theorized as obtaining between idea and language", they did so principally in terms of *visual* art. Drucker summarizes this distinction as the difference between thinking art, reading art, and picturing art. In the case of Bochner, a work such as *Language is Not Transparent* (1970) is said to point "to the meaning of the phrase as it is constituted by the visual, tactile and perceptible qualities of paint". Likewise, for Weiner, statements, which appear as Franklin Gothic letters on a wall, function as texts to be read rather than a script to be performed. In Weiner's work the idea and its instantiation come very close to each other as linguistic entities; although it could be argued that the 'idea' of Weiner's 'row of many brightly coloured objects' can be understood either as a literary representation or as a bit of language that stands in an ostensive relation to a real object.

Speaking of Baldessari's *Kissing Series*, Drucker claims that "the play with visual conventions that makes the point of the works is a demonstration of the assertion that an image contains cognitive meaning that is outside linguistic parameters". According to Drucker, these examples serve to problematize LeWitt's suggestive claim that "an idea is a machine that makes the art" because as soon as "the form makes the idea into something specific, a work, an image, a material locus" a contradiction is set in motion that announces that "the work *is* and *is not* the idea". A contradiction is also sustained by the relationship "between ideational premise and program or algorithm within the context of an information technology". The fundamental question posed within some practices of Conceptual art – "Does an idea need a body"? – can be applied, Drucker claims, "to information and to the curious condition of data in code storage". There, information in the context of computer environments has been conceived of as something located between spirit and matter; unlike its counterpart in physics which is mathematically describable in terms of thermodynamics, this definition posits something that exists in a curiously suspended state.

Drucker maps this condition onto the notion of "idea" as it has been articulated in the early practices of Conceptual art. This notion is "neither the pure, transcendent one of Platonic idealism, nor an immaterial abstraction". What is at issue here is not only the adequacy of the metaphor "information" as a description of the entire field of Conceptual art, but the desire to take "seriously the notion of idea as a visual mode" in order to "establish a way of thinking a relationship between the

linguistic and the visual that goes beyond the linguistic turn without obliterating language altogether from cultural view".

* * *

One of the lessons to be drawn from a study of the art of the 1960s and 1970s is that when systems analysis, information theory and the like are utilized as resources for making art, it is generally done so in the spirit of a productive misreading. Similarly, such intellectual resources cannot be applied unproblematically to the practice of art for gaining a deeper understanding. In one instance at least, the contemporary application of systems theory to art yields a dramatically different conclusion about the relationship of art to a wider social world. I am referring to the work of Niklas Luhmann, who described the domain of art as an operationally closed and self-referential communicative system.**[37]** According to Luhmann, art's purpose, like that of other social-symbolic systems, is communication. However, where Luhmann and the 1960s enthusiasts for systems theory in art part company is in their respective understanding of the nature of communication in and through art. The artists and critics of the 1960s and 1970s used systems theory pragmatically to facilitate the integration of art and the world. In so doing, they risked the disintegration of art. Luhmann uses systems theory analytically to stress the difference between art and the world. It is a move that risks being mistaken for an attempt to rehabilitate the Modernist practice of resistance through negation.

[37] Niklas Luhmann, *Art as a Social System*, Stanford University Press, Stanford, CA, 2000. I am indebted to Michael Baldwin and Mel Ramsden for bringing this reference to my attention. On the relationship between Art & Language and Luhmann's systems theory, see Art & Language, 'Roma reason: Luhmann's Art as a Social System', *Radical Philosophy*, 2002, pp 14-21, and the collected papers of the symposium co-hosted by Institut für soziale Gegenwartsfragen, Freiburg and Kunstraum Wien: *Art & Language & Luhmann*, Passagen Verlag, Vienna, 1997.

• Author : Ruth Catlow and Marc Garrett

• NODE.London - States of Interdependence

There is a Sufi fable in which a group of foreigners sit at breakfast, excitedly discussing their previous night's exploration. One starts saying "…and what about that great beast we came across in the darkest part of the Jungle? It was like a massive, rough wall". The others look perplexed. "No it wasn't!" says one, "It was some kind of python". "Yeah…" another half-agrees, "…but it also had powerful wings". The shortest of the group looks bemused – "well, it felt like a tree trunk to me".

This fable aptly illustrates many aspects of the NODE.London experience. The name, which stands for Networked Open Distributed Events in London,**[1]** indicates the open, lateral structure adopted to develop a season of media arts. It is intentionally extensible, suggesting possible future NODE(s).Rio, .Moscow, .Mumbai, etc. As participants/instigators in the project's ongoing conceptualization and praxis, we are just two individuals positioned on the interlaced, scale-free networks of NODE.London (more on these later). As such, our descriptions of this collectively authored project are inevitably incomplete and contestable, with a complete picture emerging only in negotiation with others.

At time of writing we are between the two key milestone events of NODE.London: October's Open Season of conferences (with its focus on media activism) and the Season of Media Arts, planned for March 2006 (which will feature distributed media arts projects, exhibitions and events). Through these events NODE.London offers a rare chance to identify shared purposes, philosophies, resources (such as licenses and tools for knowledge sharing) and common vocabularies between the media arts and media activist communities.

As artists and co-directors of the online net art group, Furtherfield.org, which began in 1997, and co-curators of the physical space called HTTP [House of Technologically Termed Praxis] in North London, which opened in 2004, we work to build our own contexts as alternatives to those already provided by the immutable, hierarchical structures of art world institutions. And it seems that there are many others with a similar drive in the areas of art practice, independent publishing and open source software development. In this way of working, issues of origin and ownership of ideas and projects are often much more fluid than those found in more traditional institutions. In common with open source software developers, as often as we instigate new participatory artworks, we contribute to existing works started by other people.

We joined NODE.London as Voluntary Organisers (VOs) in April 2005. By this

[1] The name NODE.London was conceived by Kelli Dipple (artist, NODE.London Voluntary Organiser and Tate Webcasting Curator) as a welcome alternative to the original working title SMAL (Season of Media Arts in London).

stage the Arts Council grant had been won, the first tools and preliminary ground-rules of organisation and interaction had been set, a working budget established and people from an array of backgrounds and experiences in media arts were gathered around the table, ostensibly to set a date for a festival and to come to a decision about curatorial policy. The project initiators enthusiastically communicated the vision of the project and we identified opportunities for discourse and collaboration. We were also able to discern the potential for interlinking and raising the profile of an unusually diverse programme of activities and projects from a range of cultural perspectives. From presentations of informal and experimental artistic research projects, to fully realized, complex artworks with associated communities of participation. The decision not to commission new work but instead, to raise the visibility of existing activities, was contentious but one that we supported, in that it made scant resources usefully available to a wider range of groups already doing interesting work at grass roots level.

NODE.London is an experiment in structures and tools of cooperation as invented or adapted by artists, activists and technologists, many (but not all) of whom are committed to ideas of social change through their practice. Aside from a very able project co-coordinator who was appointed in July, the entire project is run by Voluntary Organisers (VOs). Looking back, the most fundamentally challenging pre-established rule was that of consensual management – no voting and no hierarchy to take the strain (and responsibility) of decisions. We talked till we agreed and in a meeting with 30 people this could take some time. Now remember those poor friends in the Sufi fable.

In the last six months this decision-making process has necessarily evolved to incorporate additional self-assigned subgroups, with responsibility for various tasks such as PR, finance and partnerships. The public-facing NODE.London wiki and forum,**[2]** combined with monthly VO meetings, facilitates collaborative working within these groups, supporting an experiment in transparent organisation. This process throws up many hot potato issues that are beyond the scope of this text but which would benefit from careful evaluation after March. Jo Freeman's 'The Tyranny of Structurelessness'.**[3]** This seminal text, written in the context of the 1970s feminist consciousness-raising meetings, was much quoted at NODE.London meetings to provide an insight into some of the limitations of undifferentiated lateral structures in organisations.

[2] **http://smal.omweb.org/modules/wakka/HomePage**

[3] Jo Freeman, 'The Tyranny of Structurelessness', 1970
http://www.jofreeman.com/joreen/tyranny.htm

Before joining NODE.London, we were not aware of how many other people in London were involved in creating and exhibiting media artwork that deployed electronic or digital technologies, and that were exploring art in a socio-political context. In June, the idea of "Seed Nodes" (now just called Nodes)[4] was born. This idea was a cross between an earlier Wireless London[5] concept of a 'Node in Every Code' (in which London's free wireless hot-spots could be mapped) and the popular annual Open House[6] scheme (in which people open the doors of their homes to an architecturally curious public).

With very small amounts of 'seed money', geographically and culturally diverse arts venues and organisations (alternative, independent, publicly funded, and commercial) act as hubs (Nodes) for activities in their localities. Nodes connect with each other to provide opportunities for sharing resources such as printers and physical spaces (for events, presentations and exhibitions), whilst NODE.London provides technical expertise and the benefits of a centralised (and distributed) PR machine. It is intended that through this structure Nodes promote ongoing connections within their local communities whilst developing productive links and healthy interdependencies with clusters of other media-arts venues and practitioners in what was previously a scattered and cliquey community with low visibility (often even to itself).

Scale-free networks such as the network of Nodes are constantly adopted by NODE.London to facilitate the emergence of a grass roots media arts culture in London and in building its own organisational and communication structure. The internet is a scale-free network. Scale-free networks are described by scientists as networks which maintain their levels of connectivity regardless of their size. They do this by linking small 'clusters' of locally networked nodes to more massively linked hubs, which are in turn connected to each other. Theoretically this allows one to link from one node on a local cluster to another distant, local node with just a couple of steps through the hubs. This creates the 'small world' phenomena whereby anyone on the network is felt to be close to any other as well as to the centre.

Potentially, the March season offers a broad representation, making visible an otherwise impossibly diverse and unpredictable ecology of media arts activities. If NODE.London survives beyond this first year it will be

[4] More recently Seed Nodes have been renamed "Nodes" as it was becoming confusing to describe as "Seeds" the rising number of well-established and long-running London institutions that are starting to join NODE.London.

[5] **http://wirelesslondon.info/**

[6] **http://www.londonopenhouse.org/**

interesting to compare the outcomes of this collective endeavour with other, grander, centrally organized media arts fairs and the more competitive festivals such as Transmediale, ISEA and Ars Electronica.

As part of NODE.London, Furtherfield/HTTP will host Open Vice/Virtue: the Online Art Context. This is an exhibition and public art production space, featuring real-time, online collaboration and interventions in Haringey's public and private spaces through the software artworks of American artist Andy Deck's *Imprimatur* and *Glyphiti*. We wanted to highlight the work of an artist who consciously crosses the art-tech divide in his own work with a strong socio-political consciousness. His work is conceptual, representational and instrumental. "A hybrid of telecommunication software and concept art focused on the aesthetics and politics of collaborative media".**[7]**

The NODE.London 'seed funding' is making it possible for us to buy a laser printer to print collaboratively produced posters and to embed the project in our local community with workshops and open publishing sessions. Visitors can use the Imprimatur 'groupware' to create their own posters in collaboration with their online counterparts and launch a personal poster campaign based on their own social and political concerns. Posters can then circulate beyond the gallery walls to appear in the streets, schools, libraries kitchens and bedrooms. This DIY approach revives the tradition of poster-making as a medium of mass communication and persuasion developed during the 20th century. Andy Deck's work shares a common purpose with NODE.London's and ours; to explore to what extent those who view and interact with work are able to become "co-producers in a network, rather than 'audience'".**[8]**

Although so far our involvement seems to have worked well for our own small group, the organisational model of NODE.London, so inspired by the scale-free networks of the internet, is not without its lapses in egalitarianism, transparency and efficiency. And again returning to the science of these networks we shouldn't be surprised to see 'power laws' at work.**[9]** Combined with an organisational commitment to evolving cooperative processes they throw up the following issues:

- Problems of apportioning credit or remuneration for a few, very dedicated VOs and conversely, vulnerability to the behaviour of some

[7] **http://www.artcontext.com/crit/essays/transmedia/**

[8] **http://smal.omweb.org/modules/wakka/HowNodelWorks**

[9] Power laws where commonly 20 percent of participants could be expected to be found doing 80 percent of the work, etc. see Albert-Laszlo Barabasi, *Linked: How Everything Is Connected to Everything Else and What It Means*, Perseus Publishing, Cambridge, MA, 2002.

participants who may consistently take more out of the system than they put back in.

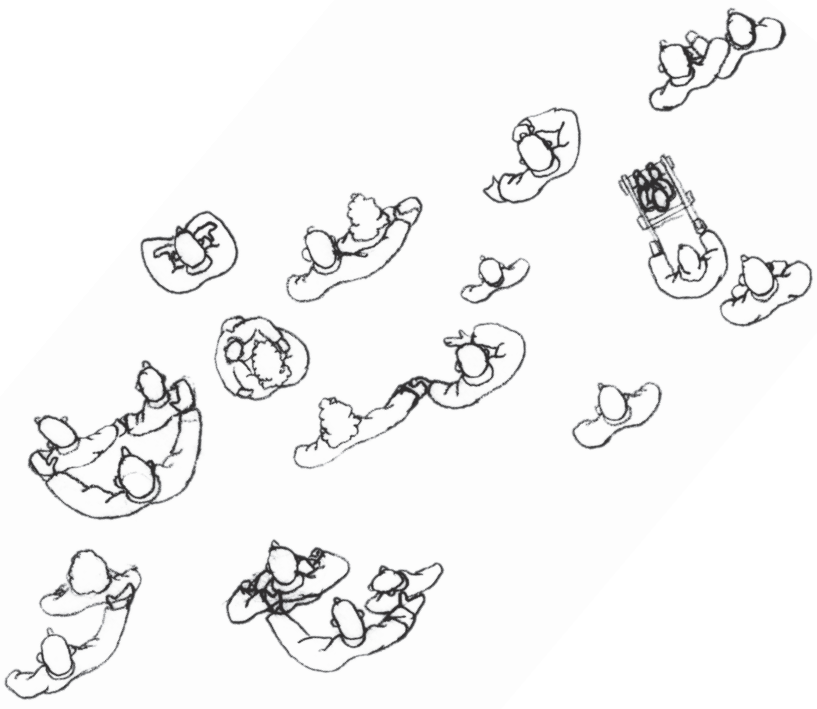
- Comparative inefficiency of the consensual management process makes meaningful engagement impossible for some interested parties.
- Some of the more established institutions have difficulty with NODE.London timelines in the context of their own management systems.
- Participants need to have a realistic sense of their own capacity or else there needs to be a strong (and uncommonly rigorous) culture of peer assessment and critique in place, when particular tasks are to be accomplished.
- Much work needs to be done to establish and prove common vocabularies between workers in different fields such as artists and programmers.

And once again we return to the explorers in our Sufi fable. In spite of volunteers' confidence in their own good faith, patience and tolerant attitudes, we can often find ourselves in fractious dialogue with each other. It's stressful to imagine that you may have been talking at crossed purposes at length with a co-worker. You fear that when the light goes up you will find yourself on your own, triumphantly clutching at a tree-trunk, when everyone else is gathered around an altogether different beast. But perhaps this is the explorer's lot.

We perceive NODE.London to be a fluid, permeable programme and a contemporary work of socially engaged Art/Tech, in that it represents a complex intersection of at least two previously separate human networks of specialisation. We anticipate that with the nurturing of a healthy, critical interdependency, a multivalent and informed vision of London media arts will emerge and come into focus.

A collaborative text by Marc Garrett and Ruth Catlow, Furtherfield/HTTP
January 2006

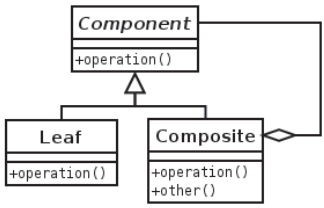
spring_alpha:
a social pattern book



it is spring...

spring_alpha is a multi-player game set in an industrialized housing estate whose inhabitants are attempting to create their own autonomous society in contrast to that of the regime in which they live. The game serves as a "sketch pad" for testing out alternative forms of social practice at both the 'narrative' level, in terms of the game story, and at a 'code' level, as players are able to re-write the code that runs the simulated world. The original narrative is based on a series of drawings by Chad McCail, "Spring" and "Evolution is Not Over Yet", which also shape the game's visual style. The original stories and images become a framework that is fleshed-out by people's own ideas and experiences. The basic aim of the game is to change the rules by which the society in that world runs. This is done through re-writing the code that simulates that world, creating new types of behaviour and social interaction. How effective this becomes depends on the players' ability to spread these new ideas into the society.

In its name, the project combines the title of one of Chad's drawings with the term 'alpha', referring in part to sci-fi dystopias such as "Alphaville" but also deriving from software development. An 'alpha' version is an early proof-of-concept program in which ideas are first formed. 'spring_alpha' is a game in permanent alpha state, always open to revision and re-versioning. Re-writing spring_alpha is not only an option available to coders however. Much of the focus of the project lies in using game development itself as a vehicle for social enquiry and speculation: the issues involved in re-designing the game draw parallels with those involved in re-thinking social structures. Rather than writing such explorations directly as code, this aspect of the project utilises a programming practice known as 'design patterns'.



Design patterns can be described in text or through UML diagrams such as this. This diagram shows the 'composite' pattern, a way of structuring a complex data model with many layers of inter-connected substructures. Each component in the data model is represented either as a composite containing other components, or as a leaf, showing that it contains no further sub-layers.

A design pattern is not a piece of code as such but rather an outline of how a particular coding task may be handled. Each pattern addresses a specific task or problem in a generalised form. A coder may then adopt this pattern, implementing it within a project in their own choice of programming language and tailoring it the project's needs. Design patterns, therefore, present a way of articulating programming practices and problem-solving approaches in a sharable form that is analogous to the sharing of actual code through FLOSS licensed libraries and source distributions [1]. Whilst they are not unique to FLOSS development, they nevertheless emphasize a similar knowledge-sharing principle.

In the same way in which source code is collected and made available through online repositories, such as Savannah and Sourceforge, design patterns have been

collated and shared through repositories such as the Portland Pattern Repository [2]. Portland introduced a new mechanism for collecting and editing patterns called the 'Wiki'. Created in 1995 by Ward Cunnigham, the Wiki adopts a simplified form of the code management systems used by repositories such as Savannah to coordinate the re-writing of code by numerous distributed programmers who download and update the projects. The most widely used code management tools include Concurrent Versions System (CVS), Bitkeeper, and Subversion (SVN) [3]. Key to these tools is the use of version control, enabling the history of changes to a source code file to be recorded, and providing the ability to step back to earlier versions and review those changes. The Wiki provides this through a simple-to-use web interface, enabling a website to be generated by multiple authors as a discursive space in which they can review and modify each other's contributions. It is a looser system than CVS, supporting less structured, more informal types of text than program code. The Wiki can be understood as a design pattern in its own right, and has proven to be a powerful one, spawning many variations and applications, including numerous knowledge-sharing forums. The most widely used of these is Wikipedia, an 'open', collaborative online encyclopaedia which has now outgrown all comparable institutionally authored encyclopaedias [4].

The design patterns concept did not originate from the programming community, however, but was adopted from the work of the architect Christopher Alexander who described it in terms of 'pattern languages'. Alexander's pattern languages were developed as an approach to designing buildings and urban space in a way that enabled potential inhabitants of a design, who were without architectural training, to communicate their own desires for the creation and use of the space as well as understand an architect's proposals. Such patterns were a way of de-mythologising and democratising architectural design so that a built environment would not simply be the whim of a singular architect, but rather a response to the collective needs and desires of the communities it housed. In place of the 'Master Builder', Alexander proposed a socially located practice:

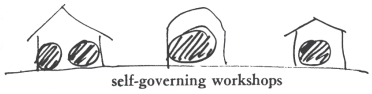
"... towns and buildings will not be able to come alive, unless they are made by all the people in society, and unless these people share a common pattern language, within which to make these buildings, and unless this common pattern language is alive itself." [5]

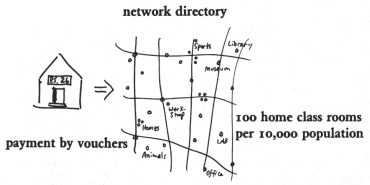
A parallel may be drawn between this and the Free Software movement's emphasis upon software development as a social issue, and the need for code to be 'free' and open in order to facilitate this [6]. Alexander himself has stated that he has been positively impressed by the adoption of the design patterns concept into programming and that programmers have, in general, appeared to understand and utilise it better than architects [7]. Whilst it operates well as a method for communicating between programmers however, there is still a way to go in de-mythologizing programming know-how akin to that which Alexander sought in architecture. Design patterns, as they are currently used within computing, also fail to implement the kind of socially located practice Alexander promoted.

"A Pattern Language: Towns, Buildings, Construction" is a repository, in book form, of architectural design patterns collected by Alexander and a team of collaborators over many years. It is intended as a reference book

and user's manual from which people (whether architects or not) can implement designs appropriate to their situation. Many of the patterns are based on observations of vernacular building and the ways in which people have made use of spaces according to their own needs rather than the purposes they were possibly planned for. The patterns address issues of building and urban space on a variety of levels, from broad elements such as mixtures of housing and workplaces down to small formal details such as window positions and room layouts. Significantly, Alexander does not present these as exclusively formal patterns dealing solely with structure and shape, but rather, he emphasizes the need for each pattern to combine "the field of physical and social relationships" upon which a successful environment depends. The patterns therefore include examples such as: "Self-governing workshops and offices" in which the workers have autonomous control; "Teen-Age society", which replaces high-schools with distributed learning networks governed by the students; "Dancing in the street", which speaks for itself; and a pattern for creating spaces for people to sleep in public. This last pattern proposes that "it is a mark of success in a park, public lobby or a porch, when people can come there and fall asleep". It is in stark contrast to the kind of regulative perceptions governing most modern cities that see such behaviour as 'anti-social' or counter-productive, highlighting just how far uses of space that are not work or consumption orientated are discouraged there. With the possible exception of the Wiki pattern, such awareness of the combined physical and social, as promoted by Alexander, is absent from the use of design patterns in computing. Here they are almost exclusively applied to formal and technical issues, how software mechanisms operate internally rather than how software functions as a human 'inhabited' environment.

Alexander's patterns are used to articulate a model of how a built environment might be both in terms of structural form and social processes supported by that. As such they can be compared to two quite distinct 'traditions' of pattern use: one located in architecture as an expression of top-down state governance, and the other created from a grass roots level to challenge existing social patterns.

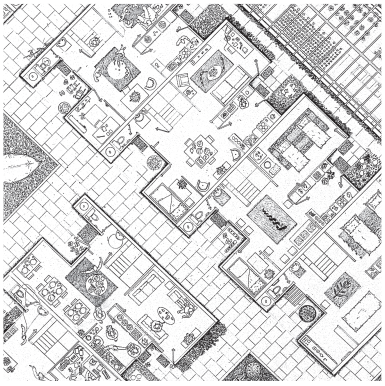




Illustrations of some of the patterns
from Christopher Alexander, et al.,
"A Pattern Language".

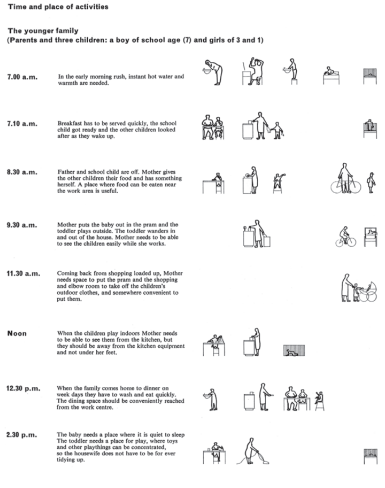
a high density council estate bordered by a railway and a river

Originally published in the 1960's, "Space in the Home" was a guide book for architects and urban planners addressing the appropriate allocation of space in designing public housing. It had the aim of reforming current design by setting standards of minimum spatial requirements for the typical inhabitants. Based on the findings of the Parker Morris report, published as "Homes for Today and Tomorrow" in 1961, the plans in "Space in the Home" were based upon a model of the typical behaviour of a modern nuclear family. The book includes not only spatial layouts but temporal plans plotting a family's typical activities during the day, in which mother stays at home and father goes to work. The architecture it promotes is, in a sense, 'programmed' according to a particular lifestyle based on traditional gender roles and the demands of Western industrial culture. "Space in the Home" is a 'closed' pattern book, however, imposing itself on the communities it addresses rather than enabling them to voice themselves within, or against it.



Houses in Chad McCail's "Spring" based on those from "Space in the Home".

It is this kind of closed and imposed social patterning that spring_alpha deliberately starts from. The housing in spring_alpha is directly derived from the designs of "Space in the Home". This is combined with a simulation system that parallels the 'spatial programming' of "Space in the Home". The simulation system in spring_alpha follows the 'smart terrains' model used in games such as The Sims [8]. In a smart terrain character behaviour is coded into the objects of the environment rather than the characters themselves. The behaviour to open a door, for example, will be coded into the door, and when a character comes into contact with that door it acquires and performs the behaviour. Social behaviours may also be encoded this way. In a pub, for



A typical family day from "Space in the Home".

example, the roles of barstaff and customer maybe coded into the different sides of the bar. In The Sims, players develop their character's behaviour by purchasing goods for them, with new behaviours being coded directly into the commodities. Whilst The Sims may claim to satirize consumer society, it nevertheless also reinforces a paradigm of consumption as the primary means of social and personal agency - you are what you buy. In spring_alpha, these closed systems are overtly opened and exposed as ones in need of re-writing. The player is not a consumer within the simulated society but rather one of many authors of it.

an overwhelming desire for an alternative

Whilst the Parker Morris patterns consolidate a set of normative social behaviours, and physically build them into the landscape, an entirely different tradition of patterns have developed to articulate ways of re-writing such behaviours and challenging the institutional mechanisms that support them. These have grown through less formal or systematic approaches than those of "Space in the Home" or Alexander, often being distributed through small-scale self-publication formats such as posters, zines and, more recently, websites.

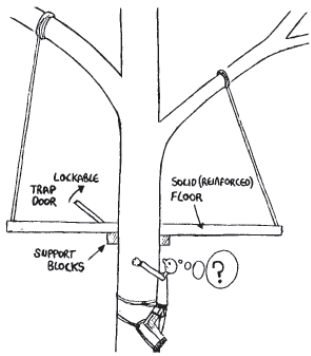
The "Glasgow User Manual" is a project currently in progress in Glasgow. The 'manual' is more of an ongoing process rather than a static publication, evolving through a series of workshops and events covering different ways of re-claiming autonomous citizenship within the city outside of consumerist and bureaucratic models. Ideas developed through these are being collated on a website, http://www.citystrolls.com, where they can be cross-referenced with broader issues and debates and made more widely available. It is informed by an older project, "The Citizens Handbook" put together by Charles Dobson and the Vancouver Citizen's Committee, online at http://www.vcn.bc.ca/citizens-handbook/, and in print as "The Troublemaker's Teaparty, A Manual for Effective Citizen Action". This focuses primarily on forms of community action whereas the Citystrolls project also aims to explore alternative ways in which the city itself can be engaged with.

The 'ex-workers collective' Crimethinc have been gathering and publishing similar material through zines such as "Rolling Thunder" which "neither reduces the organic impulses of revolt to inert theory nor prioritizes conventional activism over the subversive elements present in every other walk of life but instead focuses on sharing the stories of those who step out of line and sharing the skills developed in the process." [9] Crimethinc also make available a series of 'toolkits' such as the "Gender Subversion Kit" produced as posters and leaflets for easy distribution and use in play and workshop situations. These are comparable to Chad's "Evolution is Not Over Yet" drawings which make similar propositions and

provocations for alternative patterns of social action: "Obedience does not relieve pain", "School is not compulsory", "Money is burned". They recall an earlier series by Clifford Harper of posters presenting 'instruction manual' style images on converting terraced housing into an eco-collective and setting up a community media lab.

Various forms of 'howto' guides have been a staple part of activist culture for a long time, particularly those informed by anarchist and autonomist principles. The SchNEWS website provides a collection of online howtos covering topics ranging from running a local newspaper to making bio-diesel and road protest techniques [10]. Such knowledge is not always expressed in explicit guidebook form however. "The Heart and Soul of It" is a book put together by women of the Worsbrough community documenting their experiences of the Miners Strike in the mid-1980's [11]. Through a series of personal narratives it describes not only the running of the picket lines but also how the community sustained itself through community kitchens and swap shops. This is a kind of knowledge that often falls outside of academic and theorist studies. The howtos and the Worsbrough narratives articulate a different form of 'pattern' collection. Some are propositional, like Chad's drawings, promoting an alternative for how things could be, others, like the Worsbrough accounts, deal with the situation 'as is', acknowledging the possibility of conflict and adversity. What they share is an emphasis upon recording 'knowledge through action' and making that distributive. Here the pattern is a vehicle for propagating activity rather than imposing form.

The connections between these traditions and FLOSS methods have been recognised in projects such as Socialforge [12]. This is an online repository for developing and discussing various alternative political and social practices which has consciously modeled itself on the FLOSS code repository, naming itself after Sourceforge specifically. "A GNU World" is one project hosted on Socialforge, linked with the Oekunux mailing list [13]. Oekunux and "A GNU World" are concerned with exploring how FLOSS principles may be extended beyond code into other forms of social organisation and practice. As such they come closest to the combining of "the field of physical and social relationships" of Alexander's original pattern concept.

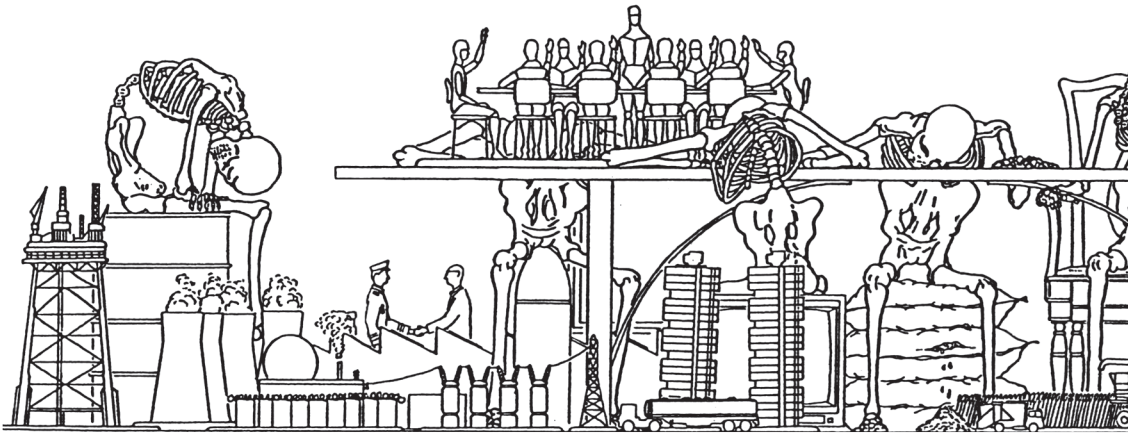


A detail from the "Gender Subversion Kit", and a plan for a tree platform from a howto on setting up a road protest camp.

careful plans for the insurrection have been laid

spring_alpha is a hybrid game-engine and Wiki. Whereas, in The Sims, game behaviours are sealed components, in spring_alpha, the code can be accessed directly during gameplay and re-written. Each object keeps a history of its changes. New code does not automatically take effect but depends on game characters adopting and activating it, therefore, gameplay itself is a dual process of re-coding and character actions. The game code is under constant surveillance by the gameworld's state security system, not unlike anti-cheat systems used in commercial games, such as "PunkBuster", but here used as an explicit part of gameplay [14]. The project as a whole, however, is bigger than the game itself. At this larger level the game serves as a focus and test-bed for forms of social pattern development through a series of workshops.

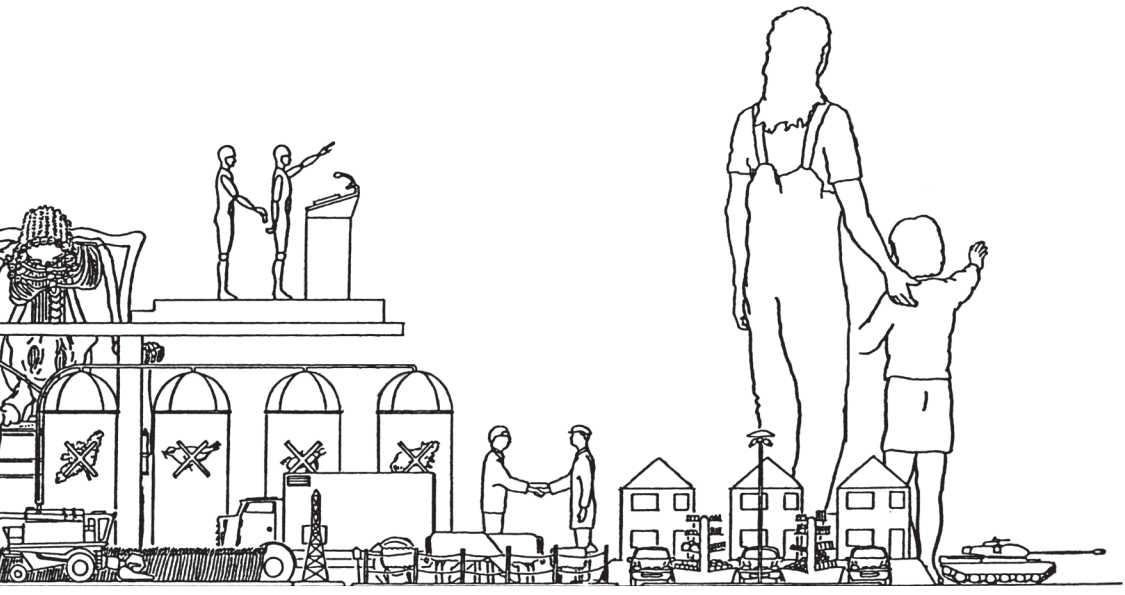
The project is being created and released through a series of modules, each of which focuses on specific aspects of the project overall. So far these have been development modules, through which the construction of the core gaming system itself has been formed along with the basic framework needed to realise the project. A series of actual gameplay modules are now starting to appear which implement more the ideas and content of the project in a playable form. Each gameplay module takes a specific element of the original story, such as the creation of re-claimed urban food gardens, a pirate radio station, or the riot in which the story culminates. The modules are developed in conjunction with different groups, such as a local community in Dundee where the project is currently based, and draw upon issues and histories specific to them. Different materials are developed from this, ranging from characters representing particular individual's viewpoints, to actual gamecode and design patterns. The design patterns enable people to articulate ideas that can be potentially



coded up by others, but even if a pattern is never coded up directly it still has significance as part of the project. Being in permanent alpha state, un-coded aspects of the project retain their potential to be implemented elsewhere, possibly outside of the game itself [15]. Each module is made available as a downloadable game and handbook. The handbook is a mixture of the player's manual and cheat-guide genre that has grown alongside commercial gaming and the howto guides described above.

In an era before the spread of home computing, anarchist educator and environmentalist Colin Ward developed a notion of learning through the city he called 'streetwork' [16]. Through this, the city is to be understood as both a resource from which to acquire knowledge, based around local issues and events, and a malleable medium that the child or citizen could shape, or 'write' back into. As well as gathering and interpreting material from the urban environment, streetwork utilises games and simulations to explore how conflicts of attitudes and values shape that environment. Such games need to be open and re-writable, necessarily partial and improvisational, permanently alpha. Games in which we play with the rules rather than by the rules. In spring_alpha conflicts and discourses of patterns can be brought into play and explored in terms of a 'knowledge through action' rather than academic rhetoric. Codework complements streetwork as dual interrogative practices. As such it provides a reflective and speculative 'object to think with' alongside the complex and contested pattern repositories of the real urban environment:

> "On the one hand, this city is the only one you will ever have, and you must make the best of it. On the other hand, if you want to make the best of if, you've got to be able to criticise it and change it and circumvent it ...."
>
> Paul Goodman, The Grand Piano, 1942



notes

[1] FLOSS stands for 'Free Libre Open Source Software'. For an overview see: http://www.sarai.net/floss_book.pdf
[2] http://c2.com/ppr/
[3] http://www.cvshome.org, http://www.bitkeeper.com, http://subversion.tigris.org
[4] http://www.wikipedia.org
[5] Christopher Alexander, et al., 1977, A Pattern Language: Towns, Buildings, Construction, New York: Oxford University Press, p.x
[6] see, for example, Richard Stallman's essay "Why Software Should Be Free", http://www.gnu.org/philosophy/shouldbefree.html
[7] see Christopher Alexander's forward to Richard P. Gabriel, 2005, Patterns of Software: Tales From the Software Community, New York: Oxford University Press, PDF version available from: http://www.dreamsongs.com/NewFiles/PatternsOfSoftware.pdf
[8] Celia Pearce, 2001, "Sims, BattleBots, Cellular Automata, God and Go", http://www.gamestudies.org/0102/pearce/, see also Simon Yuill, "Games for Hackers and Non-Hackers", 2004, http://www.spring-alpha.org/documents/module_02/VIPER_presentation.pdf
[9] http://www.crimethinc.com/a/rt/
[10] http://www.schnews.org.uk/diyguide/
[11] Worsbrough Community Group, 1985, The Heart and Soul of It, Barnsley and Huddersfield: Worsbrough Community Group and Bannerworks
[12] http://www.socialforge.net
[13] http://www.oekonux.org
[14] http://www.punkbuster.com
[15] another project is already in development using the mapping and simulation capabilities of spring_alpha to enable communities to map and model flows of 'social capital' and other intangible economies, this is intended as a toolkit to provide data to combat the imposed economic restructuing of regeneration projects
[16] Colin Ward, 1995, "Education for Mastery of the Environment", in Talking Schools: Ten Lectures by Colin Ward, London: Freedom Press, pp. 21-38, originally given as a lecture in 1978

text by Simon Yuill

drawings by Chad McCail - unless stated otherwise

spring_alpha is a project by Simon Yuill
in collaboration with Chad McCail,
Ricardo Creemers, Stefan Gartner,
Eleonora Oreggia and Mark Vernon

http://www.spring-alpha.org

• Author : Agnese Trocchi

• Business Model – the CandidaTV Approach

CandidaTV is a crew of socially engaged and demented videomakers. At the core of their vision there is the “Make your own TV” motto.

CandidaTV was born in 1999 with a weekly one-hour show on a local TV channel in Rome, Italy. As Paper Tiger TV did in the 80s in the USA, we wanted to smash the television industry myths and show that TV can be made with everyday tools: a camera can become an eye, a videoplayer can be a tool for copying and the TV set a monitor. About 15 persons were involved in producing the programme. There were actors, camerawomen, editors, directors, writers, speakers and anchormen. Over the years we have been able to understand what could satisfy better the attitudes and desires of everyone, and we specialized our work. But to start we just shared everything and exchanged responsibilities and jobs as a “creative commons”.

At the end of 1999 CandidaTV secured a deal with a local commercial TV station. The channel needed a certain amount of original programming, Candida needed space on-air and the deal was done.

Insane and enthusiastic, we were on air for nine weeks but after that time the main dependency we share in this world became too heavy: the dependency on money. It wasn’t a surprise – we expected to face the problem of money because our goal was to promote CandidaTV’s vision of decentralized TV production and broadcast and to deal with the market at the same time. Which is to say, we desired to infiltrate the mainstream media and to get paid for this. Two paths lay before us: working for someone else and using the spare time to realize our projects or unifying job and creation in one activity, which would mean working autonomously. We chose the latter, and the result of this choice has been the emergence of a collective working reality, not a solitary and competitive one. To face together the world of labour we needed a legal body: this is the reason why in May 2001 we founded “Candida Social Co-op”, a small-sized cooperative entity that represents Candida legally and financially.

CandidaTV grew up from seeds planted in the 90s in the very fertile ground of the Social Centre “Forte Prenestino” in Rome, Italy. Self-management and refusal of any compromise with the rules of mainstream society were some of the ethical principles of the lifestyle in Forte Prenestino. We decided to develop CandidaTV outside of Forte Prenestino because we were aware that there might be commercial aspects to setting up a media enterprise in which the Forte Prenestino project as a whole might not wish to participate. We were moving at a different pace because we were smaller than the large squatted community. Having different structures that proceed at a different pace is a resource instead of a

problem if different realities are knitted together in the same network.

Imagine two economies: one where people produce goods because they choose to, using their own means of production, in order to create something useful or pleasurable and which anyone can use. We may consider it under the umbrella-term of the 'FLOSS economy'. The other one is an economy where material goods are typically made by people working for a wage, they are made for others who own the means of production and they are made in order to create profit by selling the products (Seaman, 2002). Obviously the latter is precisely the economy of the society in which we live. Due to this structural dependency on money and the imperative to earn a living that this model imposes, we have been trying to mix these two different economies with the aim of moving more and more towards a pure FLOSS model. From this perspective, in the past four years we had experiences with manifold commercial and non-commercial organizations such as TV-satellite companies, Public Administrations (EU and local administrations), cultural associations, private companies, arts organizations and universities. We have been selling our services to private and public bodies, which has afforded us space to manoeuvre economically, and given us resources such as tools and time. We have also been working to develop European or local projects that are financially sustainable but also very much in line with our interests. These have included a laboratory for audiovisual alphabetization and documentaries and video inquiries on migration, labour, ecology, war and media politics.

Drawing on the disparate resources and involvements of this 'mixed economy', we have been able to pay rent and office costs, to buy a computer for editing and a professional camera, to produce video and documentaries appealing to broad audiences and of course to pay taxes for all these years (a legal body is expensive and to wear it make you visible to the eye of the state). However, we have not yet been able to pay ourselves a real income, so we still exploit ourselves while envisaging the promised land where we will all break the gates of poverty and precarity and gain our freedom of being. If every one of us was alone instead of acting together as a collective entity, employment, although most likely temporary, would be probably less difficult to obtain, but it would definitely be a more restrictive and less satisfactory way of working and producing. So we don't regret our choice (yet).

Our engagements producing content for Italian TV and satellite broadcaster haven't been very financially rewarding as the cost of video productions in Italy has been falling over the past ten years. Satellite and TV stations tend to broadcast independent productions where the only

payoff is the mirage of being “Seen on TV”. This curious mystique is exactly what we fight against, as we want everyone to make her/his own TV and not to be exploited by commercial TV channels. Our productions are available online for independent broadcasters and private users under Creative Commons licenses but we don’t want a commercial channel to broadcast our videos without paying us. They function in a capitalist market, not a commons, and there we want to be paid like everyone else. At the same time if a creature similar to us wants to use our work for commercial purposes we don’t oppose their request, as we need to promote a network of independent producers capable of generating an internal market of peer production.

The reality of independence for us means that you don’t have only one main source of income but that you can rely on a diffuse system of producers, distributors and broadcasters that together give life to a solid and ethical market model that respects relationships and the living context of people’s activities. CandidaTV, as a legal body, lives at the edge between the friendly and free environment of the commons and the gaping void of the capitalist media domain. She is extremely fragile; to the eyes of people that pursue profit exclusively she appears as a weird animal that should be studied and exploited. Her fragility is due to the fact that her habitat is an economy where to give money in exchange for something else is not the norm, an ecosystem where other goods such as expertise and pleasure are the currency. Candida’s immune system is weak and the immune system of any FLOSS organization shows similar weaknesses confronted with the dominant economic system that surrounds it.

To go towards a different system we need to know and manage the laws of market and money so we can transfigure them. We can’t change the ruling economy if we are only producers or coders; we need to be aware of the real consequences of financial and economical management on our terms. It’s a lot of work, which is not always creative or engaging, but in order to shape new economic relationships it needs to be done, and it can potentially become as much a work of the imagination as the work of artists, videomakers and creators is – the engendering of sustainable mixed economies that adhere to FLOSS principles but also are able to parasitically draw on market mechanisms. This is not the best of the possible business models, but it’s the business model CandidaTV has been trying to implement. This document provides a tentative genealogy of our experiment so far.

• Author : Tim Stott

• Next on the Left, or: 'What Good is a Map if you Know the Way?'*

For the French curator, critic and art theorist Nicolas Bourriaud geography and cartography are now the most appropriate means of exploring the networks, boundaries and socio-economic formations that constitute and circumscribe human relations in the present day.[1] The complexities of the contemporary world – those of financial markets, information networks, social relations, etc. – are said to be 'unfigurable', opaque and unrepresentable. As noted elsewhere, the means of representing the geographical spaces of everyday life are now more akin to the condition of abstract art in the twentieth century: the map cannot confine itself to some putative physical description, or copy, of the territory, as it must account for the speed, fluidity and ephemerality of contemporary means of transport, communication and media technologies: "Physical description is to geography what anatomy is to sexuality. They no longer suffice to realise the complexities of their 'domains'".[2] Nevertheless, these complexities can still be plotted, surveyed and mapped.

Representations no longer correspond to reality as it is lived – they can no longer be superimposed upon it: hence, cartography becomes a spatial activity, i.e. it is to be *lived through*. In short, it is no longer a matter of describing a *surface* (such as the surface of the globe), but of reconstructing a *scene* wherein social relations are played out. Accordingly, contemporary art can be described as an 'offshore zone' that attempts both to maintain a distance from, and venture into social realities by shifting the scale of its attention: its critical 'eye' is not panoramic, but *varifocal*.

Bourriaud goes on to claim that as a result of the "connectionist ideology" and "reticular imagination" that govern contemporary life, and the tendency towards near-instantaneous communications and transportations, accessibility (i.e. making connections) now has more to do with *virtual* than *spatial* proximity (even though this *virtuality* might result from the logic of capital accumulation),[3] allegedly presenting the possibility of a transnational constituency. Where social relations and encounters have become obscured by their 'spectacular' representation, they can be

[1] Nicholas Bourriaud, 'Topocritique: contemporary art and geographic enquiry', in exhibition catalogue for *GNS*, Palais de Tokyo, Paris, 5 June-7 September 2003, pp 9-40.

[2] Bernard Marcadé, 'GNS: Leçon de Géo au Palais de Tokyo', *Beaux Arts Magazine* 230, July 2003, pp 68-73, p 72 (my translation). See also Bourriaud, 'Topocritic …' pp 18-21.

[3] That virtuality might be structurally correlative to economic growth and the "annihilation of space by time" (Marx) is rarely addressed by Bourriaud, yet it would seem to complicate the critical aspects of 'relational' or 'topocritical' art, based as it is upon such a logic of temporal and mobile connections.

given form and developed through the 'topocritical' artwork, which serves as a framework for new models of living.

Topocritical art aims to "encourage a 'democracy of viewpoints', a polyculture of the imagination, in other words, the opposite of the monoculture of information".**[4]** To do this, it must make "archaeological excavations inside the knowledge, objects and spaces that determine our reality",**[5]** because within this largely administered reality there remain *terrae incognitae* of living, human spaces; areas standing against the statistical transformation of the mass in market-led civilisation. When investigated and reconstructed in the relational artwork, the products of this research are 're-humanised', so to speak.

In order to test Bourriaud's claims, we must take a brief excursion into the history of Western European cartographic practice. So, I shall begin with a seemingly unrelated question: "Why would the highest mountain in the world be named after one man, whose origins lay thousands of miles away, and who had never in his life set eyes upon the 'great snowy mass' of Mt Everest"? To answer this question fully would require an extensive study of the activities of the British Trigonometrical Survey in the Indian subcontinent.**[6]** As such historical research is beyond the scope and intention of this essay, I mean to answer the question obliquely, through a consideration of cartography as an instrument of knowledge-as-power, and as an extension of an all-seeing, acquisitive eye/I: in other words, as a prosthesis to the *corpus iuris.*

Cartography and/as power

Broadly speaking, a map is used to clarify the topographical and geographical complexities of a particular area in order to assist navigation across or within it. But more than this, cartographic activity is linked to the designs (in both senses of the word) and purposes of those who those who carry out this activity. Infused with the socio-economic and cultural values of those who make them, maps play a discursive and rhetorical

[4] Bourriaud, 'Topocritique …', p 32.

[5] Ibid, p 34.

[6] Briefly put, its project – begun in 1806 and finally discontinued after the Great Rebellion of 1857 – was to map a 20' arc of the longitudinal meridian using basic trigonometry, advanced surveying equipment, and prodigiously complex mathematics to gain an unprecedented degree of cartographic accuracy. The hero of this expedition was one Sir George Everest (by all accounts a pedant to the point of tyranny). A comprehensive historical account of this expedition is significant by its absence, the only account on offer being John Keay's *The Great Arc: The Tale of How India Was Mapped and Everest Was Named*, HarperCollins, London, 2000, which reads more like a Boy's Own adventure than historical research.

role; they are “a class of rhetorical images and are bound by rules which govern their codes and modes of social production, exchange, and use just as surely as any other discursive form”.[7] Cartography, then, is intimately linked to practices of acquiring geographical and topographical knowledge, but it also binds its object of study within a certain set of rules and thereby facilitates the strategic employment of this knowledge (hence, the original development of the disciplines of geography and cartography in the shadow of the military). The capacity for cartography to do this might be better understood when knowledge is analysed in spatial terms. Rather than privileging the temporal metaphors associated with the experiential model of individual consciousness, knowledge can be thought of spatially, as a dissemination of the depersonalised affects of power. A spatial/strategic analysis “enables one to grasp precisely the points at which discourses are transformed in, through and on the basis of relations of power”.[8]

If knowledge-as-power has a spatial dimension then it can clearly be seen that the surveyor of the landscape does not simply replicate an environment but, in doing so, reproduces the territorial dictates of particular political interests. Surveying would then be an act of ‘surveillance’, one might say, somewhat disguised by the *doxa* of accurate measurement as an end in itself.[9] (The accuracy of surveying techniques finds a direct correspondence with the ever more detailed subdivision of land, as a means of extorting maximal returns per area on investment; but these expansive, colonial interests of capital are naturalised when the emphasis is placed upon accuracy as a measure of scientific veracity). Thus, to map a geographical area is to assert sovereignty over it – to claim to *represent* it, pictorially and politically – and to divide the space contained therein ‘in terms of territorial control and political authority’.[10] In this case, the map speaks a rhetoric which asserts and

[7] J.B. Harley, ‘Maps, Knowledge, and Power’, *The Iconography of Landscape*, Daniel Cosgrove and Stephen Daniels, eds., Cambridge University Press, Cambridge, 1988, pp 217-312 and pp 278-9. See Alfred Gell, *The Anthropology of Time: Cultural Constructions of Temporal Maps and Images,* Berg Publishers, Oxford, 1992, especially chapters 23 and 24: also Jorge Luis Borges, ‘A New Refutation of Time’, *The Total Library: Non-Fiction 1922-1986*, Eliot Weinberger et al., eds., trans., Penguin Press, London, 1999, pp 317-332.

[8] Michel Foucault, ‘Questions on Geography’, in *Power/Knowledge: Selected Interviews and Other Writings 1972-7*, Colin Gordon, ed., Brighton, 1980, pp 63-77, p 70.

[9] See David Harvey, *Spaces of Capital: Towards a Critical Geography*, Edinburgh University Press, Edinburgh, 2001, especially ‘Cartographic Identities: geographical knowledge under globalisation’, pp 208-233.

[10] Jeremy Black, *Maps and Politics*, Reaktion Books, London, 1997, p 12.

communicates proprietal and territorial rights. The mapping of certain areas by those groups which claim dominance over them has the effect of reinforcing and reifying the pattern of human spatial relations that are sympathetic to those dominant groups.

The primary spatial form of power is *territoriality*.**[11]** However, the areas identified by mapping are not territories *per se*, but become so only when the boundaries and divisions that they describe become authoritative, and are used to influence or control the activities of that area, along with movement to and fro across its borders. Territoriality defines and classifies space by area and not by type: it is therefore a means of asserting control if the significant social relationships and groupings of a particular area cannot be fully enumerated or negotiated with directly. The territory can thus divide space into 'neutral' units that, for example, ignore contestations over land-use.

Boundaries, and the maps that articulate and authenticate them, communicate possession, and the control of either already extant boundaries or the means of putting them in place confers a certain control of access to the area that the boundary circumscribes. Territoriality is a relationship, and therefore it is not absolute but differential, occurring as part of a complex hierarchical organisation. Moreover, because it is relational and not directly spatial, it can have influence over and through space, and in this way it is a form of action over distance. The map, as a representation of territoriality, enables this distribution of influence; it is thus that it can be thought of as a 'prosthetic eye'.

When power is inscribed upon the land it becomes reified, and it makes the relationships of power and influence tangible by making them visible. A *corpus iuris* may be taken for granted when its constitution is displaced from the relationship of control to the territory that carries it; when it becomes, quite literally, 'the law of the land'. The interests of capital would benefit to a large degree from the obfuscatory and classificational aspects of territoriality. Capital needs to see space as a framework in which events and the laws which govern them are "contingently and temporally located"**[12]** rather than irrevocably inscribed across the land, but because of the logic of its accumulation and growth, capital must fix itself within space and make new spaces available in order to absorb its surplus.**[13]** Of course, the territorial accumulation of power and the

[11] Robert David Sack, *Human Territoriality: its Theory and History*, Cambridge University Press, Cambridge, 1986, p 26.

[12] Robert David Sack, 'Human Territoriality: a theory', in *Annals of the Association of American Geographers*, volume 73, 1983, pp 55-74; p 67.

[13] David Harvey, *The New Imperialism*, Oxford, 2003, pp 98-9 and 109-12.

accumulation of capital are not reducible to one another, but they are rarely in outright conflict, and, most importantly for us here, the strategies of territoriality enable 'vacant' spaces to become available to capital (the phenomenon of 'squatting' illustrates this point clearly). In order to facilitate its expansive activities, capitalism must perpetually recreate the geographical landscape in its own image. It is aided in this by cartographic practices precisely because they act as instruments of *territorialisation*, creating a knowledge space "within which certain kinds of understandings and of knowing subjects, material objects and their relations in space and time are authorised and legitimated".**[14]** When in the service of imperial expansion, these practices authorise and legitimate the logic of capital accumulation, as well as 'knowing subjects' appropriate to this logic.

Highly privileged amongst these 'knowing subjects' is the cartographer. His eye surveys and maps the landscape, yet in doing so it detaches itself from this territory crossed by power and desire. The cartographer's eye is ascendant, leaving behind its desiring body. In this way, it is similar to those "invisible eyes"**[15]** that St Augustine turned to God, whilst denouncing the *concupiscentia ocularum*. Yet the cartographer's eye is not transfixed so much by the Divine as by the *lux* of scientific rationality. In light of the above, we begin to see how appropriate it is that the imperial heights of the 'great snowy mass' should be synonymous with the elevated eye/I that once attempted, in the name of science, technology and progress, to survey, and hence colonise and exploit, all of India from atop the 'apex' of triangulation.

The 'walker' and the 'voyeur'

The panoptic eye of cartography in the service of imperial expansion is de-personalised, a detached vision in the service of a mobile, surveying consciousness. It is the eye of Icarus, or the 'voyeur-god':

> His elevation transforms him into a voyeur. It puts him at a distance. It transforms the bewitching world by which one was "possessed" into a text that lies before one's eyes. It allows one to read it, to be a solar Eye, looking down like a god. The exaltation of a scopic and Gnostic drive: the fiction of knowledge is related to this lust to be a viewpoint and nothing more.**[16]**

[14] David Turnbull, 'Cartography and Science in Early Modern Europe: Mapping the Construction of Knowledge Spaces', *Imago Mundi* 48, 1996, p 7.

[15] See St Augustine, *Confessions*, Henry Chadwick, trans., Oxford University Press, Oxford, 1991, pp 209-212.

[16] Michel de Certeau, *The Practice of Everyday Life*, Steven Rendall, trans., University of

Laid out below, the world becomes a readable picture, a 'human text' – a theoretical fiction and nothing more. The 'voyeur-god' – the "space planner urbanist, city planner or cartographer"**[17]** – can know, in the rarefied air of his/her alienation, only a world devoid of breath. Unsituated and displaced, the omniscient view of the voyeur is seen from nowhere: its 'space' is impossible to occupy, being that of a timeless present: "[it] is a point of space [from] where no man can see: a no place outside space but nowhere, utopic".**[18]** Its putative description of a space supposes all to be visually present before the eye/I, and thus comprehensible, but in order to make this description it must construct an abstract and homogeneous space, free of contradiction, division and radical difference. But such a description of the world cannot be ideologically neutral, as it claims to be: the objects that it supposes to be available to description (such as the demarcation of urban 'territories') are hypostatised and isolated from their histories. It thus posits itself as an imaginary solution to real contradictions.

As an instance of the 'microphysics of power', the imposition of rational order upon space is "the minuscule and ubiquitously reproduced move of 'gridding' (*quadriller*) a visible space in such a way as to make its occupants available for observation and 'information'".**[19]** However, society does not only function according to its dominant types of procedures (those that have become discourse), there are other practices that remain minor: beneath the 'monotheistic' dominance of 'panoptic apparatuses' (Foucault) there might subsist a 'polytheism' of divergent and fragmented practices**[20]**. The privileging of one practice over others diminishes the former's previously 'silent' functioning, thus compromising its efficacy, and in turn the dominant practice will become 'vampirised' by other practices. As the patterns of consumption that capital dictates in order to reproduce itself can never be exhaustive or final, these other, under-privileged patterns might become operational in society as 'tactical' practices of consumption.**[21]**

California Press, Berkeley, 1984, p 92.

[17] Ibid, p 93.

[18] Louis Marin, *Utopics: Spatial Play*, Robert A. Vollrath, trans., Humanities Press, New Jersey, 1984, p 207.

[19] Michel de Certeau, *The Practice* … pp 46-7.

[20] Michel de Certeau, *Heterologies: Discourse on the Other*, Brian Massumi, trans., Minneapolis University Press, Minneapolis, 1986.

[21] On the difference between 'tactics' – as creative appropriation of the dictates of consumption, based upon the notion of consumption as constitutive of identity and self-actualisation – and 'strategies' – as inherently colonial, in that they seek to secure bases

In contrast to the 'voyeur', de Certeau talks of the 'walker', who knows space bodily, not visually, following and inscribing a 'text' of which he/she is not the author, and therefore cannot read. The strangeness (the *terrae incognitae*) of the everyday eludes representation – it is obscure to the clear-sighted 'voyeur' – and it is this opacity which lends the space of the 'walker' a Baroque character. The visual culture of the Baroque had a fascination with opacity, ambiguity, indecipherability and the rather melancholy desire to represent the unrepresentable. It refused an ascendant, panoramic vision, and realised the necessity of accommodating itself to the distorting and overwhelming excess of appearances that constituted a "madness of vision".**[22]** As Martin Jay notes, this "explosive power of the baroque vision … is seen as the most significant alternative to the hegemonic visual style [of] Cartesian perspectivalism"**[23]** (and, we might add, the Northern tradition of painting the description of the world's surface that found its ideal accompaniment in cartography, and which similarly posits a non-situated observer).**[24]**

Historically, it was a time when the assertion of a multitude of relatively positioned, individual viewpoints, and the social instability this produced, constituted a threat to the hegemonic aspirations of an absolutist monarchy (in seventeenth century Spain). As a response to this threat, and aware of the limitations of the previous tactic of occasional violent repression, a 'culture of guidance' was established by the monarchic state: a culture of reaction and redemption that sought to correct the erosion of social hierarchy through the very potentialities that threatened it. So we can see that the phantasmagoria of Baroque vision was originally used to repress-by-seducing the possibly disruptive social forces of the multiplicities of newly formed urban masses. The propagandist intentions of the monarchic state were focused upon the mediation and direction of the agency of the masses: "What we might call a simple *static guidance controlling by presence* had to give way

from which to exercise power and domination, see Michel de Certeau, *The Practice …* "Making Do': Uses and Tactics", pp 29-42; XII, 'Reading as Poaching', pp 165-176 and xix. Furthermore, the operational logic of 'tactics' is structural and collective; it does fall back upon the 'private language' of the individual.

[22] See Christine Buci-Glucksmann, *La folie du voir: de l'esthétique baroque,* Editions Galilée, Paris, 1986.

[23] Martin Jay, 'Scopic Regimes of Modernity' in *Vision and Visuality*, Hal Foster, ed., New Press, New York, 1999, pp 3-23; p 16.

[24] Svetlana Alpers, *The Art of Describing: Dutch Art in the Seventeenth Century*, University of Chicago Press, Chicago, 1983.

before a *dynamic guidance controlling by activity*".**[25]**

Most important to us here is José Antonio Maravall's notion of the *resorte*, which translates variously as a 'motivation', 'expedient' and 'movement' acting upon the consciousness of the subject. The *resorte* is that figure which binds the agency of the subject to the state, not only mediating the expenditure of activity but predisposing that agency towards a particular course of action *before* it can be thought of as the effect of an agent, so that every action on the part of the agent is always-already a

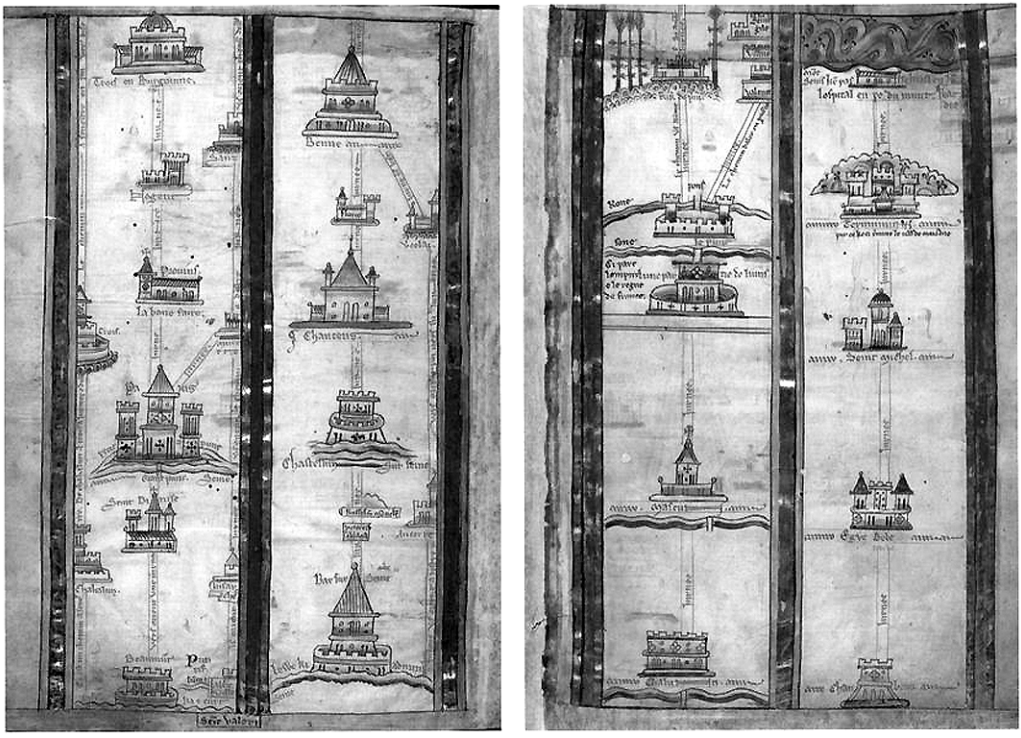


Illustration •• Matthew Paris; 'Itinerary from Bar-sur-Seine to Troyes' (verso) and 'Itinerary from Tour de Pin to Chambery' (recto), Historia Anglorum (circa 1255), 36 x 25cm: British Library

[25] José Antonio Maravall, *Culture of the Baroque: Analysis of a Historical Structure*, translated by Terry Cochran, Manchester University Press, Manchester, 1986, p 68.

*re*action.[26] The movement of the mass would be affected through the interrelated mechanisms of 'suspense' and 'wonder:' the former as a means of arresting "one's attention in a state of anxious instability so as to reinforce the consequence of emotional effects"[27] and of propelling the plot of a particular narrative; the latter, as a mechanism of retrospective causality that (re)introduces the 'changed' subject to a pre-configured social space. Maravall's study shows that these two mechanisms find their ideal medium in Baroque theatre, wherein a *causal* narrative is developed, so that the 'wondrous action' and the final return of the forces of contemplation and admiration previously in suspension are seen to converge and follow on from previous actions in the narrative. Needless to say, there is a particular interest for the state in this performance of change and development in the activity of the subject which yet does not affect the underlying social hierarchy from which the state derives its power. Thus, the subversive plurality of Baroque vision and the emergent masses, and the "moment of unease"[28] inherent to its daily experience that might so easily spill over into acts of sedition, comes undone when the (ecstatic) body is seduced by the *corpus iuris*, when it recognises itself within a preconfigured narrative which is that of those who would dominate it.

As noted above, Bourriaud claims that the role of the topocritical cartographer is not to describe a surface but to construct a scene in which the cartographer takes part. In order to remain critical – indeed, in order to map the social relations played out in the scene – the topocritical cartographer must both venture into *and* maintain a distance from this scene. This is what Bourriaud calls "varifocal" attention. Yet upon closer inspection, whether occupying the position of an impossibly clear-sighted 'voyeur' or being blindly guided by others as a 'walker', there seem to be critical deficiencies at these two extensions of the topocritical cartographer's 'focal length'. Bearing this in mind, we can now move on to a more detailed discussion of contemporary practices of the cartographer as a 'walker'.

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[26] *Resorte* translates literally into English as 'spring' (in the mechanical sense of the word), and it retains this meaning in Spanish. Following the mechanic (Newtonian) model should clarify the operation of the state/agent relationship: in its 'natural' state, the spring is inert; it is only when it is acted upon (extended) that the spring re-, or counter-acts with an opposing force. Thus we see the inherent reciprocity and tension between hegemony and counter-hegemony, for instance: 'Translator's Introduction' in Maravall, *Culture of the Baroque*, pp xxvii-xxviii.

[27] Ibid, p 216.

[28] Jacqueline Rose., *Sexuality in the Field of Vision*, Verso, London, 1986, p 233.

Mapping narratives / walking in the city

The 'walker' traces a *trajectory* rather than plots a point or connects co-ordinates upon a longitudinal/latitudinal grid. The French artist Pierre Joseph's 'memory maps' of Japan and the Paris *métro* trace an accumulation of trajectories through time, remembered in the practice of map-making. For Joseph, maps are "the world lost and the world

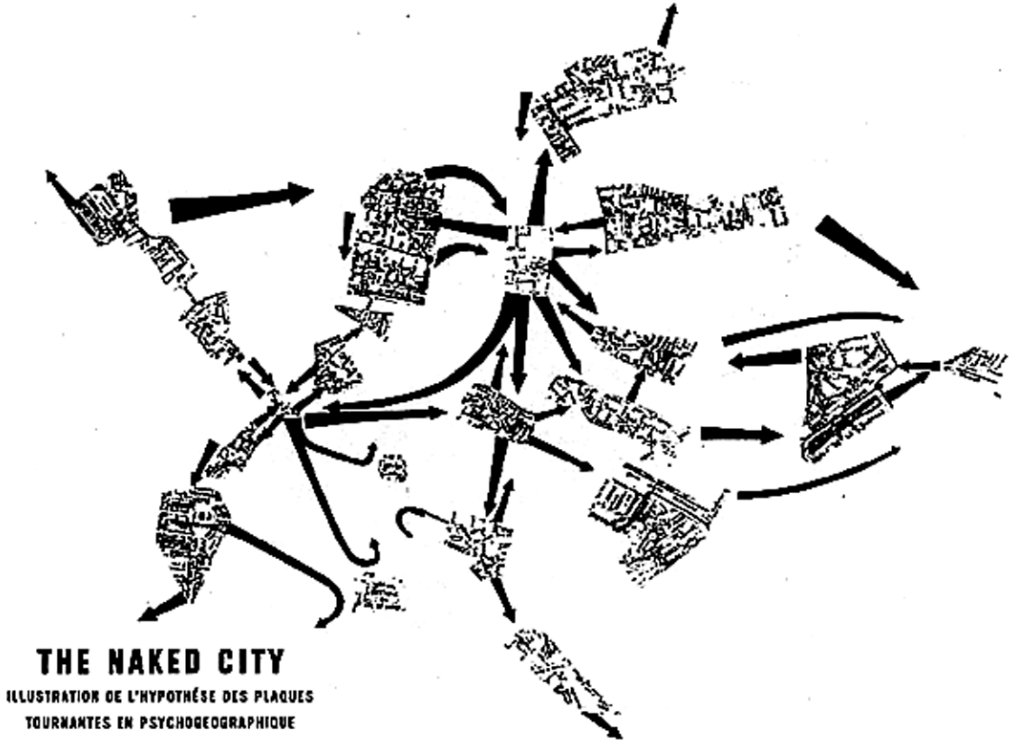

Illustration •• Guy Debord, The Naked City, illustration de l'hypothese des plaques tournantes en psychogeographie, (1957), print

found",[29] a way of realising the world and forming a plan (in both senses of the word). His journeys as a 'walker' compare to the "spiritual itineraries" of Matthew Paris, which allow "human interpretation to enter into the cartographic text"; they are "exegetical maps [that] treat nature negatively as a space of discontinuity between sites of civilisation".[30] In other words, these 'itineraries' treat the natural world as a 'non-space', open to human imagination. Matthew Paris' maps might be better described as *historia* rather than *geographia*: they are not maps to be followed literally, but, in common with contemporary *mappaemundi* of the thirteenth century, they are an aid to "self-distancing from the world in preparation for the contemplative ascent"[31] and ultimately to the contemplation of the spiritual unity to be found in God's plan, beyond the vicissitudes of history and geography. These 'itineraries' engage the viewer's interpretive faculties in a way that the naturalised framework of instrumental rationality never can: they are discursive and open to historical exegesis. Interpretation enters by way of the 'empty sign' of the parallel lines that connect the 'sites of civilisation', showing the natural world beyond as unread and unwritten – again, a 'non-space', or gap – known in total only by God, and knowable in part only by the spiritually enlightened traveller of the imagination. Being wholly dependent upon the contingencies of viewing and reading, these 'itineraries' "literally reverse modern habits of map reading: instead of moving from the map to an objective world, we move from the map to a deeper textuality".[32] The natural world is personalised, established through reading, interpretation, and presumably, dialogue concerning its nature and extension. Similarly, Joseph's maps personalise the environment of the traveller through the function of subjective interpretation, whilst recognising the necessary deficiencies of such an account: they also posit the natural world beyond as a 'non-space'. Knowledge of this totality is accessible only to one who is omnipotent and to whose masterplan the 'walker' must remain subordinate: in Paris' case this is, of course, God; in Joseph's, as we shall see, it seems to be Capital.

[29] *GNS*, p 124.

[30] Michael Gaudio, 'Matthew Paris and the Cartography of the Margins', *Gesta* XXXIX/1, 2000, pp 50-7; p 50. On the performative relation between the viewer/'traveller' and the map, see Daniel K. Connolly, 'Imagined Pilgrimage in the Itinerary Maps of Matthew Paris', *AB* LXXXI, 1999, pp 598-622.

[31] Marcia Kupfer, 'Medieval world maps: embedded images, interpretive frames', *W&I*, X, 1994, p 270.

[32] Michael Gaudio., 'Matthew Paris…' p 53.

For Joseph, maps make the world familiar again, allowing one to chart a 'possible itinerary'. They correspond to the reality of one's surroundings in such an assuring way that it is enough just to have a map in one's pocket and not consult it. To follow a map is to place oneself under a benign authority; to follow a strategy dictated by a world already "thought out by others", that then allows for play with that given environment:

> In a way, you place yourself under a guardianship and you start with the principle that the world has already been thought out by others and that you can play around with that capital**[33]**

In creating his own maps, constructed without prior consultation of other maps of the area, Joseph claims to replace his own "murky" experience of an area in the structure of the conventional cartographic plan: to produce a perfect replication of the area would be to make himself "invisible", and so his personalised versions aim to show his visibility, i.e. his *resistance*, within an urban milieu. To do this he must make the imaginative leap of thinking the world no longer there, that there is a world to be retraced, eventually rediscovering himself in the singular experience of personal map-making. His posture is that of a "fake pioneer".

Whilst this practice might be welcomed in response to the neutral and reified descriptions of cartographic survey, asserting instead the contingencies and vicissitudes of personal urban experience, and the *activity* of mapping that considers space not in absolute but in relational terms, still it naturalises the political and ideological forces that bear upon this experience. Following Maravall's figure of the *resorte*, we can see how rediscovering oneself thus – recognising oneself in "a world thought out by others" – might be to reintroduce oneself as subject, according to the retrospectively causal narrative that preconfigures social space: or, in other words, to affect the completion of ideological interpellation even at the moment of its denial. Need it be said that insofar as the subject imagines itself autonomous, and the sum of his/her experiences as irreducible to the discourse of ideology, "this imaginary distance towards ideological identification is the very sign of its success".**[34]** In short, although Joseph returns a necessary, *active* subjectivity to cartographic practices, he neither adequately investigates the complexity of contexts and goals that constitute this subjectivity, nor draws out the specific politics of that constitution.

[33] Pierre Joseph, *GNS*, p 125.

[34] Slavoj Zizek, *The Ticklish Subject: the Absent Centre of Political Ontology*, Verso, London, 1999, p 259.

Undoubtedly, there is a need for cognitive mapping (such as Joseph makes) to represent the multinational network of late capitalism[35] – that space of spectacular immediacy, perceptual saturation and discontinuity – so as to forestall the alienation of the urban citizen from their environment. The identity of the subject is, in part, determined by its position in space and its relation to other bodies: there is a "cartographic consciousness"[36] that defies easy representation, and therefore demands a broadened resource of representative means. The significance of research into cognitive mapping – how the subject visualises their environment in map-like form so as to be able to orient his/herself – is to be found in the relation between these visualisations and behaviour, and to what extent this behaviour distorts, or is distorted by, the environment.[37] In particular, this cognitive mapping *might* disclose those patterns by which the subject is guided in its behaviour (see Maravall above), and conversely, those points of convergence that might found a collective visualisation of the urban psycho-milieu. Following this train of thought, we might now look at the Situationist maps that Guy Debord based upon the tactic of the *dérive*, to which Joseph's work has some affinity.

Debord's *The Naked City* (1957), as a map of the *dérive*, is said to bring out those differences that are suppressed by the abstract and homogeneous descriptions of the 'voyeur', by fragmenting and re-connecting the *Plan de Paris*. In the *dérive*, the city is experienced as a cluster of events, never fully seen and always contingent:[38] there are spaces where experiences coalesce or resonate, so-called "unities of atmosphere", between which red arrows marking trajectories of "impassioned attraction" trace an open narrative. Space is shown to be inhabited, i.e. it is not some contextual container which social relations somehow fill, but a product of the performance of inhabiting. As such, space is incorporated into social practice. As a practice of inhabiting

[35] Frederic Jameson, 'Cognitive Mapping', in *Marxism and the Interpretation of Culture*, edited and with an introduction by Cary Nelson and Lawrence Grossberg, MacMillan Press, London, 1988, pp 347-357.

[36] David Harvey, *Spaces of Capital*, p 221.

[37] Robert David Sack, *Conceptions of Space in Social Thought*, MacMillan Press, London, 1980, especially pp 95-105.

[38] Guy Debord, 'The Theory of the Dérive', in *The Theory of the Dérive and Other Situationist Writings on the City*, Libero Andreotti and Xavier Costa, eds., published to coincide with the exhibition Situationists, Art, Politics, Urbanism, Museu d'Art Contemporani de Barcelona, 3 November 1996 -6 January 1997, Actar, Barcelona, 1996, pp 22-7.

space, the *dérive* was an attempt to contest the reification of lived experience as it becomes representation, and so contest the 'society of the spectacle':**[39]** in other words, to *re*-entangle the detached eye/I in the densely opaque daily behaviours of urban experience.**[40]** It was also an attempt to transgress the naturalised territories and causal narratives inscribed upon social space, in order to reconstruct them in terms of libidinal and sensual pleasures. Ultimately, it was to unearth the possibilities for a new organisation of urban life that were hidden in the reified structure of the city.**[41]**

The function of Joseph's works as cognitive maps is ultimately normative: they seek to attain a command of a particular terrain and to determine its character, but in order to obtain a coherent position for the subject and for his/her view, they must sacrifice the contingency of subject positions and relations. The *Naked City*, however, resists the regulative ideal of the cognitive map when it becomes the *site* (not the *scene*) of a social geography that lives out the discontinuities and divisions of the urban environment: "[it] openly acknowledges itself as the trace of practices of inhabiting rather than as the imaginary resolution of real contradictions".**[42]** In contrast to Joseph's habit-forming wanderings, pyschogeographic cartography expresses a "complete insubordination to habitual influences".**[43]**

The *dérive* is somewhat akin to the nineteenth-century practice of *flânerie* as developed by Baudelaire. The persons active in both are out of place,**[44]** ambivalent towards the crowd that surrounds them: the former through affecting an aristocratic detachment, the latter by suspending class allegiances. However, the difference between them is in their attitude towards the "hegemonic scope of modernity":**[45]** unlike the *dériveur*, the *flâneur* makes no criticism of the gendered and class-based "gaze of modernity which is both covetous and erotic".**[46]**

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[39] Guy Debord, *The Society of the Spectacle* (1967), Donald Nicholson-Smith, trans., Zone Books, New York, 1994.

[40] The influence of such activities upon de Certeau's 'walker' is here made clear, cf Michel de Certeau,*The Practice*… pp 92-3.

[41] Guy Debord, 'Introduction to a Critique of Urban Geography', *Les Lèvres Nues* # 6, 1955, in *Theory of the Dérive and other*… pp 18-21.

[42] Thomas F. McDonough, 'Situationist Space', *October* 67, Winter 1994, pp 59-77; p 69.

[43] Guy Debord, 'Introduction to a Critique of Urban Geography', op. cit, p 20.

[44] Walter Benjamin, 'On Some Motifs in Baudelaire', *Illuminations*, edited and introduced by Hannah Arendt, translated by Harry Zohn, Fontana/Collins, London, 1973, pp 157-202; p 174.

[45] Thomas F. McDonough 'Situationist Space', p 73.

[46] Griselda Pollock, *Vision and Difference*, Routledge, London, 1988, p 67; cited in Thomas F. McDonough, op. cit., p 74.

> Instead, he embodies that gaze. He maunders through the Parisian *passages*, both voyeuristic and aloof, the city surrounding him as spectacle offering itself up to his discerning eye. He considers the city to be immediately present (already "thought out by others") to his aestheticising gaze, rather than under continuous social construction. In addition, according to his ambivalent situation as bohemian rebel and producer of commodities, he becomes
>
> > ... the observer of the marketplace. His knowledge is akin to the occult science of industrial fluctuations. He is a spy for the capitalists, on assignment in the realm of consumers.

And further:

> > Empathy with the commodity is fundamentally empathy with exchange value itself. The flâneur is the virtuoso of this empathy. He takes the concept of marketability itself for a stroll. Just as his final ambit is the department store, his last incarnation is the sandwich-man.**[47]**

That is to say, by virtue of his bondage to them, the *flâneur* comes to embody the fluid commodity forms of the marketplace: as a producer of cultural commodities, he peddles ideological fashions; as a 'sandwich-man', he advertises for the capitalist state.

Certainly, Walter Benjamin recognised the ambiguous status of the commodity itself, and in the outdated commodities of the arcades that were the habitual stamping ground of the *flâneur* he found the promise of a new sensory world – a world where the commodity died and became a sign of history, to be deciphered. But for this to happen, for this promise to be kept, the arcade had to be closed, its goods made unavailable; it is only then that 'archaeological excavations' can be made "inside the knowledge, objects and spaces that determine our reality". By contrast, Joseph's *flânerie* does not sink to the depths of the social in order to disclose its enigmas and fantasies,**[48]** and inasmuch as it deciphers at all the signs that surround it, these signs feature only within an autobiographical poetics. As such, it is antithetical to the tactical activities of the 'walker' and the *dériveur*.

[47] Walter Benjamin, 'On Some Motifs in Baudelaire', as previous.

[48] Jacques Rancière, 'The Aesthetic Revolution and Its Outcomes', *New Left Review* 14, March-April 2002.

Perhaps a more appropriate comparison would be the Surrealist street adventures of André Breton, in which the city becomes a succession of impressions that leave their traces across the subjectivity of the walker. To experience the city in such a way is to formulate, describe and articulate a renewed subjectivity; it is to once again 'find one's way,' to recreate and display oneself in a familiar environment, *à la* Joseph. As we have seen, the problem here is that to 'find one's way' seems to be to configure a subjectivity by aligning one's path with those already inscribed upon the urban landscape by those who maintain, through the authority of their accumulated capital, the capacity to structure it. Furthermore, it might be more a case of *re*-territorialising rather than *de*-territorialising (see above): certainly, the boundaries of power are remapped according to a more fluid rationale, but the authority of those boundaries and the spaces of power they delineate are not subverted. Again, it is a matter of establishing a solid base in the present from which to project the fantasy of future possibilities rather than losing one's way in order to find those potentialities already inherent to the world as it is currently perceived.

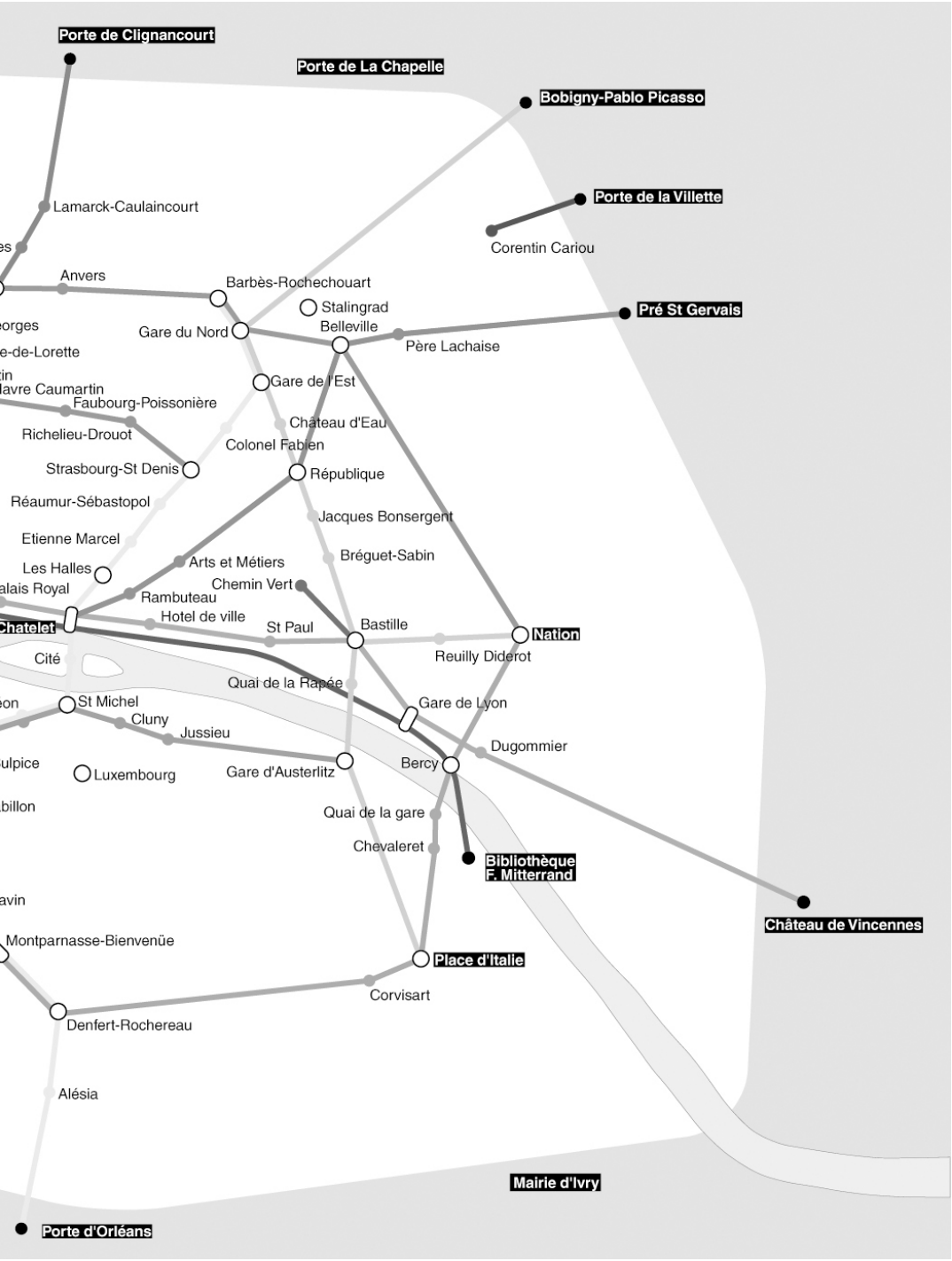
The *dérive*, however, is a way of walking that does not allow for autobiographical representation: it is a collective activity that attempts "an impersonal objectivity of impression" by affecting the "enunciatory and ambulatory disappearance of the walker".**[49]** It is an activity devoid of territorial ambition, as it follows desire into the labyrinth wherein it loses its way without any intention to find itself again in a description (a map) of an itinerary, or the retrospective composition of a coherent narrative. Whereas the Situationists attempt a "living critique" that would lead to "revolutions in individual everyday life",**[50]** Joseph's *pseudo*-tourist itineraries offer a simple recuperation of the *status quo*. The construction of situations, as a prelude to the non-alienated (artistic) reconstruction of life, was not to be a spectacular performance, nor was it to result in consumable property. To paraphrase Vincent Kaufman (see note 49, above), the real game of reconfiguring the experience of the urban environment commences once it foregoes the possibility of describing or determining its actions.

In conclusion, we will return to Bourriaud's original statements concerning the necessity of cartographic art practice. The representation of social encounters is, of course, necessary for numerous reasons, but when

[49] Vincent Kaufmann, 'Angels of Purity', translated by John Goodman, *October* 79, Winter 1997, pp 49-68.

[50] 'The Theory of Moments and Construction of Situations', (unsigned), Internationale Situationiste # 4, June 1960, pp 10-11; reproduced in *Theory of the Dérive* … p 101.

Illustration •• Pierre Joseph, Mon Plan de metro de Paris (2000), digital print on aluminium, 135 x 170 cm, GNS 2003


Porte de Clignancourt
Porte de La Chapelle
Bobigny-Pablo Picasso
Porte de la Villette
Corentin Cariou
Lamarck-Caulaincourt
Anvers
Barbès-Rochechouart
Stalingrad
Pré St Gervais
Gare du Nord
Belleville
Père Lachaise
Gare de l'Est
Faubourg-Poissonière
Château d'Eau
Richelieu-Drouot
Colonel Fabien
Strasbourg-St Denis
République
Réaumur-Sébastopol
Jacques Bonsergent
Etienne Marcel
Bréguet-Sabin
Les Halles
Arts et Métiers
Chemin Vert
Rambuteau
Hotel de ville
St Paul
Bastille
Nation
Cité
Reuilly Diderot
Quai de la Rapée
St Michel
Gare de Lyon
Cluny
Jussieu
Dugommier
Luxembourg
Gare d'Austerlitz
Bercy
Quai de la gare
Chevaleret
Bibliothèque F. Mitterrand
Château de Vincennes
Montparnasse-Bienvenüe
Place d'Italie
Corvisart
Denfert-Rochereau
Alésia
Mairie d'Ivry
Porte d'Orléans

these representations become a substitute for encounters *per se* then something has been lost: cartography functions as an aid to knowledge of social relations, not as their replacement. What is more, in becoming art, the 'subversive plurality' of marginal groups, situations or experiences falls under the gaze of a contemplative subject that reduces them to a play of "relational forms",**[51]** and, in doing so, disavows the positioning of that subject within the world by playing out the illusion of disconnection.

It must be stressed here that this essay is by no means an exhaustive analysis of 'topocritical' art. Nevertheless, I believe that Pierre Joseph's work exemplifies a tendency in some 'topocritical' art to superimpose upon the urban environment a recreated yet still sovereign subjectivity; a subjectivity that is highly theatrical, driven yet constrained by the projective and invasive power of a forward narrative movement. Insofar as it does this, 'topocritical' art still harbours territorial ambitions and cannot therefore offer a model of a dispersed, relational subjectivity made possible by an increasingly reticular imaginary. Similar in nature to the *dérive*, the latter subjectivity follows a non-purposive and circular movement which allows it to be receptive and to see itself inaccurately replicated throughout its environment: a multiplication that would at once make the boundaries of any reconstructed self superfluous, and therefore impossible to preserve, and thereby allow the forms of the world to constitute its anonymous identity.**[52]** This dispersed form of subjectivity is crucial to the development of the alternative, relational forms of living that Bourriaud seeks to encourage.

On a more mundane level, the very mobility and fluidity of *some* contemporary art and its practitioners – as Bourriaud claims: "the majority of artists today are globetrotters"**[53]** – only further embeds art practice within the ideology and circulation of global capital. It is uncritically assumed that the privileges of globetrotting artists are ubiquitous or universally representative. But is it either a "connectionist ideology" or "reticular imagination" that governs contemporary life? Not necessarily. This way of life presupposes a level of material support that goes unacknowledged, or is assumed to be 'friction-free', by much allegedly critical art practice: hypermobility is most often considered as a simple corollary to digital technology and telematics, and not another instance

[51] Nicholas Bourriaud, *Relational Aesthetics*, Simon Pleasance and Fronza Woods, trans., Les Presses du Réel, Paris, 2002, pp 11-21.

[52] ''One big soul' (The Thin Red Line)', Leo Bersani, and Ulysse Dutoit, eds., *Forms of Being*, BFI Publishing, London, 2004, pp 124-179.

[53] Nicholas Bourriaud 'Topocritique…' p 32.

of the erosion of space by time that accords with the accumulation of capital. To claim that "accessibility has more to do with *virtual* rather than *spatial* proximity" is, as Saskia Sassen has noted, to privilege "the fact of instantaneous global transmissions over the concentrations of built infrastructure that make transmission possible".**[54]** That is to say, this mobility, as fluid as it may seem, is wholly imbricated in *fixed* areas of production that have a *spatial* extension – a space where the local and the global engage.

Any endorsement of the deconstructionist dissemination of the Self into the open field of contingent social interaction and the *bricolage* of relational forms, if it is not also to endorse the hallucinations of a radically subjectivised environment, must be countered by an acknowledgement that these forms eventually 'come down to earth' in fixed localities – in the decay and inertia of material reality.**[55]** It is (usually) in the space of the city that the global 'comes down to earth' in the local, and the decentred subject is made palpable: it is here that resistance is felt. Thus, the city emerges as a strategic site for a "place-specific politics with a global span",**[56]** but this strategic potential is obviated if the 'non-place' of conventional cartographic practice is established, as this would deny political engagement with the local in 'street-level' politics. Bourriaud says elsewhere that, "the model [of contemporary art] is not necessarily reduced in size but is quite capable of functioning on a scale of 1:1 … Reality is imposed as the sole instance of legitimisation of artistic activity",**[57]** but scale is not just a matter of *size*, it is also a matter of position and assumed distance; that distance which is a traditional requirement of cartographic practice. This necessary distance of the contemplative eye leads us back toward that position of putative neutrality and coherence, one which does not allow for the contestatory nature of the represented terrain, rehearsing the various conceits of naming mountains after men.

* This is a revised version of an essay first published in *Variant*, volume 2, number 21, winter 2004.

[54] Saskia Sassen 'The City: Between Topographic Representation and Spatialised Power Projects' in *Art Journal*, 60, 3, Summer 2001, pp 12-20; p 13.

[55] Slavoj Zizek, 'Against the Digital Heresy', in *On Belief*, Routledge, London, 2001.

[56] Saskia Sassen, op. cit., p 19.

[57] Nicholas Bourriaud, 'Modelised Politics', in *Flash Art XXVI*, no 171, Summer 1993, p 142.

• Author : ambientTV.NET

• The Filmmaker as Symbiont: opportunistic infections of the surveillance apparatus[1]

Filmmakers render aspects of nature, human activity and imagination visible. The documentary film continues to be a potent form in all its variety, from the personal video diary to "objective" fly-on-the-wall shoots, to the hybrid fact/fiction ("faction") film. But the most prolific documentarists are no longer to be found in film schools and TV stations. In some European and American cities, every street corner is under constant surveillance using recording closed-circuit TV (CCTV) cameras. Such cameras are typically operated by local government, police, private security firms, large corporations, small businesses and private individuals, and may be automatic or controlled (zoomed and panned) from a remote control room. Filmmakers, and in particular documentarists of all flavours, should reflect on this constant gaze. Why bring in additional cameras, when much private and public urban space is already covered from numerous angles?

Manifesto for CCTV filmmakers declares a set of rules, establishes effective procedures, and identifies further issues for filmmakers using pre-existing CCTV (surveillance) systems as a medium in the UK. The manifesto is constructed with reference to the Data Protection Act 1988 and related privacy legislation that gives the subjects of data records (including CCTV footage) access to copies of the data. The filmmaker's standard equipment is thus redundant; indeed, its use is prohibited. The manifesto can easily be adapted for jurisdictions of other European nations. The Manifesto is online at **http://www.ambienttv.net/content/?q=dpamanifesto**

[1] In addition to the boom in surveillance, the proliferation of miniature mobile cameras (many built into phones and other handheld devices) has led to the phenomenon of "sous-veillance" activities carried out by the population at large. News services now actively solicit amateur recordings from camcorders and even mobile phones, often combining them with CCTV footage where they have access to it, when reporting from scenes of crimes, accidents or natural disasters. The manifesto can be extended to provide a framework for films that work with acts of sous-veillance.

MANIFESTO FOR CCTV FILMMAKERS (UK VERSION, 2005)

GENERAL

The filmmaker is not permitted to introduce any cameras or lighting into the location.

SCRIPT

A protagonist ("data subject") is required to feature in all sequences.
Data Protection Act 1998; 1998 Chapter 29; Part II Section 7(1).[2]
An individual is entitled -

(a) to be informed by any data controller whether personal data of which that individual is the data subject are being processed by or on behalf of that data controller,

(b) if that is the case, to be given by the data controller a description of -
(i) the personal data of which that individual is the data subject,
(ii) the purposes for which they are being or are to be processed, and
(iii) the recipients or classes of recipients to whom they are or may be disclosed,

(c) to have communicated to him in an intelligible form -
(i) the information constituting any personal data of which that individual is the data subject, and
(ii) any information available to the data controller as to the source of those data, and

(d) where the processing by automatic means of personal data of which that individual is the data subject for the purpose of evaluating matters relating to him such as, for example, his performance at work, his creditworthiness, his reliability or his conduct, has constituted or is likely to constitute the sole basis for any decision significantly affecting him, to be informed by the data controller of the logic involved in that decision-taking.

The documented activity of the protagonist must qualify as personal or sensitive data. The filmmaker is to establish this by locating a surveillance camera and circumscribing the field of action for the actors relative to it, so that incidents of biographical relevance (i.e. that reveal personal data) occur in the frame.
ICO CCTV systems and the Data Protection Act JB v.5 01/02/04[3]
2. The court decided that for information to relate to an individual (and be

[2] Data Protection Act 1998 Chapter 29
http://www.opsi.gov.uk/ACTS/acts1998/19980029.htm

[3] CCTV systems and the Data Protection Act JB v.5
http://www.informationcommissioner.gov.uk

covered by the DPA) it had to affect their privacy. To help judge this, the Court decided that two matters were important: that a person had to be the focus of information; that the information tells you something significant about them.

The provisions of the 1998 Act are based on the requirements of a European Directive, which at, Article 2, defines, personal data as follows:

"Personal data" shall mean any information relating to an identified or identifiable natural person; an identifiable person is one who can be identified, directly or indirectly, in particular by reference to an identification number or to one or more factors specific to his physical, physiological, mental, economic, cultural or social identity.

The definition of personal data is not therefore limited to circumstances where a data controller can attribute a name to a particular image. If images of distinguishable individuals' features are processed and an individual can be identified from these images, they will amount to personal data.

All people other than the protagonist ("third parties") will be rendered unidentifiable on the data obtained from the CCTV operators. Typically, operators blur or mask out faces of third parties. The filmmaker is to consider the visual impact of this manipulation, and to establish a rule for the handling of footage delivered with ineffectual masking or blurring – for example, reporting the offence.

Right to Privacy in Article 8 of the Human Rights Act 1998:[4]

[4] Article 8 of the Human Rights Act 1998 (CCTV and the Human Rights Act) **http://www.crimereduction.gov.uk/cctv13.htm**

RIGHT TO RESPECT FOR PRIVATE AND FAMILY LIFE

1. Everyone has the right to respect for private and family life, his home and his correspondence.
2. There shall be no interference by a public authority with the exercise of this right except such as in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic well being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights or freedoms of others.

DPA1998

4. On the other hand, the disclosure of third party information in compliance with a subject access request may also expose the data controller to complaint or action by the third party, for example [...] for breach of confidence.
6. The data controller should consider to what extent it is possible to communicate the information sought without disclosing any third party information [...] This might be achieved by editing the information to remove names or other identifying details.

LOCATION

The filmmaker is to choose sites that are covered by multiple surveillance cameras, preferably operated by a large business, private security firm or public authority – or, if operated by a small retailer, cameras of the kind that can be panned and zoomed remotely. Sites may be mobile – for example, a public bus.

ICO CCTV systems and the Data Protection Act JB v.5 01/02/04

If you have just a basic CCTV system your use may no longer be covered by the DPA. [...] Small retailers would not be covered who

- only have a couple of cameras
- can't move them remotely
- just record on video tape whatever the camera picks up
- only give the recorded images to the police to investigate an incident in their shop

For every camera used, the operator's name and contact details are to be noted.

Code of practice issued by the Data Protection Commissioner, under Section 51(3)(b) of the Data Protection Act 1998, 07/2000[5]

7. Signs should be placed so that the public are aware that they are entering a zone which is covered by surveillance equipment.

[5] CCTV Guidance and the Data Protection Act - Good Practice Note
http://www.informationcommissioner.gov.uk/eventual.aspx?id=5740

The signs should contain the following information:
Identity of the person or organisation responsible for the scheme.
The purposes of the scheme.
Details of whom to contact regarding the scheme.
(First Data Protection Principle).

FOOTAGE REQUESTS

After completing each shoot, the filmmaker is to address a written request ("subject access request letter") to the CCTV operator ("data controller") immediately to ensure that the data recovery process can be initiated while the recordings are still archived. (Mandatory retention periods vary).

Code of practice issued by the Data Protection Commissioner, under Section 51(3)(b) of the Data Protection Act 1998, 07/2000

1. Once the retention period has expired, the images should be removed or erased (Fifth Data Protection Principle).

The subject access request letter is to state the place and time of the recording and include a picture of the protagonist, wearing the same clothes if possible, and a cheque for £10 (the maximum fee chargeable). Letters should be sent by a secure system which provides evidence of delivery. (Some data controllers may require the notarisation of the letter to legally establish identity).

Data Protection Act 1998; 1998 Chapter 29, Part II Section 7(2)

A data controller is not obliged to supply any information under subsection (1) unless he has received -
(a) a request in writing, and
(b) except in prescribed cases, such fee (not exceeding the prescribed maximum) as he may require.
The filmmaker is to allow a maximum 40 days after sending the data request for an initial response.
Code of practice issued by the Data Protection Commissioner, under Section 51(3)(b) of the Data Protection Act 1998, 07/2000
A data controller must comply with a subject access request promptly, and in any event within forty days of receipt of the request or, if later, within forty days of receipt of:
the information required (i.e. to satisfy himself as to the identity of the person making the request and to locate the information which that person seeks); and the fee.
The filmmaker is to establish a set of rules for handling the various formats in which the data may be sent (video tape, DVD-video, digital files encoded with proprietary codecs, hard copies of frames).

SOUND

CCTV systems are not permitted record sound. The filmmaker is to establish a set of rules for the soundtrack (if any) of the movie – for example, prohibiting field recordings.

DISTRIBUTION

Footage received is subject to complex copyright issues. The filmmaker is to take legal advice and establish a strategy.

FOR EXAMPLE

The rule of production as outlined in this CCTV Manifesto was applied for the project *FACELESS* - a series of film, photography, net and installation pieces by Manu Luksch . For *FACELESS*, the character of Ma Nu swaps data controllers for a film crew; already installed surveillance devices for cameras and cranes; and the letter of the law for a script. *FACELESS* is collated entirely from 'readymade' sequences in the form of CCTV footage. Scripted as a science fiction film, the story takes place in the London of the near future. Like all other inhabitants, the protagonist Ma Nu does not have a face. No one can even remember that humans ever had faces. And like all other inhabitants, she goes to work, without undertaking much else. Her life changes drastically when she wakes up one morning to discover, in the place where there should

be a void, a face. In panic, her first reaction is to try to erase it, but this proves to be unsuccessful. She doesn't want to look different from the others! What happened? And why to her? With the help of a local child, she slowly unravels the lost history of human faces, discovering their power, and embarks on a journey to discover their future.
While *FACELESS* uses a fictional narrative to refresh our view on the increasing infringement of our civil rights in the name of security, another piece produced by ambientTV.NET, *Orchestra of Anxiety*, takes on the security industry and its booming catalogue of products in response to the much-advertised need for technologically-enhanced security by providing a tool, or, more precisely, a musical instrument: Manu Luksch and Mukul Patel collaborated to invent a series of musical instruments, which are entirely made from materials and technologies from the security and surveillance industries. The central focus of the installation is a harp, traditionally regarded as a sacred or metaphysical instrument. However, unlike standard harps, this one is strung with razor wire, requiring the harpist to wear protective gloves while playing. Touching a string triggers multiple projections and sound sources in the gallery: one theme shows a guard dog in various stages of protective aggression. The second theme however, a playful reflection on movement in a CCTV covered neighbourhood, could have been produced following the Manifesto: we see various situations around a tower block filmed by CCTV – people returning home, pizza being delivered, families taking the shopping out of the car boot, and if the harpist strikes the right strings, a youth dance group (Alluminae) gathers on the car park to perform their latest dance items, best viewed from bird's perspective: CCTV!

Orchestra of Anxiety was premiered at and commissioned by Watermans in London. It is shown this March, 2006, in Bratislava through the initiative of Slovakian media lab 13 kubikov and with the support of the British Council.

Orchestra of Anxiety **http://www.ambienttv.net/5/ooa**
FACELESS **http://www.ambienttv.net/content/?q=faceless**

●Author : Samantha Hunt

●The Difference Engine

Two Theories, One Train

On a train crossing England in the mid1800s Charles Babbage watched as a common house fly traveled into the future. Bumbling from the rear of the carriage to the front, the fly stopped atop a lady's floral hat and regurgitated. It is what flies do when they aren't flying. At that very instant when the creature ceased moving forward, Babbage thought that the moments of time the fly had just flown through, like slices of bread, moments that the fly imagined he had left in the past, slammed into the creature yet a second time as the train gained on London and caught up with the fly's flight. "Wonderful", Babbage thought even if it wasn't entirely correct.

Mr. Louis Pasteur, another passenger on this mythic train, twisted his paper into a sword and swatted at the fly. The be-hatted woman screamed as Pasteur hit his mark. "Madame", he excused himself, "forgive me", and began to explain how the secret regurgitations of house flies are repositories for germs. The woman quickly changed seats, fleeing the madman. As Pasteur was just then on his way to share his theory with the Royal Society, his confidence was shaken. He had been considering how to best phrase it. He had rehearsed, "The reason why so many people are dying is because the air and the water are filled with tiny, lethal beings that we cannot see". The woman notified the conductor and so Pasteur's stomach sank. He did not need to travel into Babbage's future to know how his ideas would be received in town.

At the junction of the Romantics and the Victorians, poetry permeated math and science. New theories and technologies traveled at warp speeds even if sometimes they were moving in the wrong direction. My nostalgia for this era resides in the arabesque grace and the velocity of scientific thought, a velocity where a few individual scientists such as Pasteur were plucked up into the bosom of history while scores of brave but failed scientific wrecks were left by the roadside. It is these wrecks I am most interested in.

Imaginary Numbers

Charles Babbage, whose full title is ESQ., M.A., F.R.S., F.R.S.E., F.R.A.S., F. STAT. S., HON. M.R.I.A., M.C.P.S., COMMANDER OF THE ITALIAN ORDER OF ST. MAURICE AND ST. LAZARUS, INST. IMP. (ACAD. MORAL.) PARIS CORR., ACAD. AMER. ART. ET SC. BOSTON, REG. OECON. BORUSS., PHYS. HIST. NAT. GENEV., ACAD. REG. MONAC., HAFN., MASSIL., ET DIVION., SOCIUS. ACAD. IMP. ET REG. PETROP., NEAP., BRUX., PATAV., GEORG. FLOREN., LYNCEI. ROM., MUT., PHILOMATH. PARIS, SOC. CORR., ETC. was the father of the computer,

inventor of the heliograph, the cowcatcher, the first speedometer, occulting lights for lighthouses, standard railway gauges and screw threads, a device for walking on water that almost worked, an expert picker of locks as well as being an extraordinary thinker and tinkerer.

In 1833 Babbage, 42, met Ada Byron, 17, daughter of Annabella Milbanke and everyone's favorite depraved poet Lord Byron. Soon after Ada's birth, after Byron's alleged incestuous affair with his sister, Annabella took her five month old daughter away from her father beginning a lifelong project of rooting the Byronic from not only Ada but indeed, the world. Annabella fed Ada on a diet of reason, strict morality, manipulation and math resulting in Ada's appropriate response: she conducted her first love affair at the tender age of 13 with her math tutor. She loved math.

Four years later, when she met Babbage, he was intensely interested in both stomach pumps and the railway as they illustrated reversals of nature. They contained a germ of Babbage's favorite theory, one he perhaps had explained to Ada this way, "I believe that if you know for certain a number of facts about an object you should be able to, via computation, just like addition, travel these conditions into the future and know how the object exists there", as if he could ride a train into the by-and-by and return later that night with a forecast.

"You mean", Ada asked, "through math you can predict the future?"

"Not predict. Know for certain".

"Anything?" she asked.

"Anything that can be translated into numbers", he said as he thought that he had yet to meet an object that could not be rendered numerically.

"For example", Ada asked, "which horse will take first place in Saturday's race?"

Charles and Ada locked eyes and each smiled that certain warm smile that comes from stacks and stacks of gold coins piling up in the imagination.

Charles needed the money badly. For years he had been developing a machine he called the Difference Engine, a large apparatus, never wholly constructed in Babbage's life time but that even in skeleton form could tabulate terrifically and even more importantly, Charles saw a way that it could store the knowledge it had learned and act on it the next time. The Difference Engine, and a second version, the Analytical Engine were, in the 1850s, computers or they would have been had Charles ever had the money to complete their construction.

Babbage had a natural head for numbers excluding those in his bank account. To Babbage, numbers were the very stardust of the universe. Everything was numbers. A horse was the number of teeth in its mouth, the measurement of its mane, the variety of dapples, how fast it could run or even the number of maggots its carcass would produce in death.

"Small pieces of horse flesh are piled up. In a few days the putrid flesh is converted into a living mass of maggots. These are sold by measure: one horse yields maggots which sell for 1s. 5d. The rats which frequent the fresh carcass of a horse are innumerable. 16,000 rats were killed in one room in four weeks, without any perceptible diminution of their number. The furriers purchase the rat skins at about 3s the hundred".

To Babbage the expression, "I feel like a number", was not a bleak statement decrying anonymity but rather more similar to saying, "I feel like a flower. I feel like a butterfly. I feel like every wondrous thing in the universe even the tenacious, if disgusting maggot".

Ada was mesmerized. Not with love – there was never romance between the two – but by Charles' view of the world that made room for both the strict mechanical morality of Annabella and the wild curves of Byron. Ada set to work publishing articles on the wonders of the Difference Engine, drafting the very first "programs" for the engine to run on and ultimately, though much of the written evidence of Ada's "gaming fever" was veiled or destroyed by Annabella, it seems that she, with Babbage's help, developed a formula to render racehorses as numerics: weight, speed in past races, places won, jockey's height, horse's leg length, horse's age – values which could be calculated or fed like grain into the Difference Engine that in turn produced what would today be called odds. Hypnotized by the wonder of numbers, it does not appear that Ada considered these odds to be odd at all but rather mathematical certainties as solid as 2 + 3 = 5.

Dr. Frankenstein

Tucked away in the Quantock Hills of Somerset England a scientist toiled. In the converted ballroom of a grand house known as Fyne Court a man named Andrew Crosse distilled stinky solutions into a number of beakers, skipped meals, tore at his hair, grew mineral crystals in bone china teacups, made lightning-fueled Leyden jar batteries in the house's old organ loft and spoke to himself in verse

Crosse, yes Crosse will be selected, When he in turn makes life electric!

A true mad scientist, Crosse was responsible for temporarily revivifying a notion of spontaneous generation. He harkened back to the good old days, pre-Enlightenment, pre *ex-ovo omnia*, when folks believed life could come from nothing save a bolt of electricity.

Crosse dripped a chemical mix over pumice stone that he then battered with an electric charge. The pumice soon began to produce stalactite precipates and in a few more days wiry insects, *Acari electricus* crawled from the pumice. Life! he thought. He had made life from

nothing. Faraday was fascinated. Mary Shelley was inspired to write *Frankenstein*, modeling her doctor on Andrew Crosse. But sadly, spontaneous, the bugs were not. Crosse was wrong however terrifically, wonderfully so.

Ada was entranced by Andrew Crosse due in part to the fact that she was painfully in love with his troublesome son John. Troublesome as both she and John were married to other people. Still John became Ada's lover and an active member of her gambling syndicate, an assemblage that drew on both her aristocratic connections as well as her seedier ones. The syndicate included John Crosse, Richard Ford, William Nightingale (father to Florence) as well as two mystery men known as Fleming and Malcolm.

For Charles and Ada to proceed with their gambling venture Ada had to secure a letter of permission from her husband William, that would allow her to gamble. Though the money they lived on was hers, as a woman Ada was not allowed to own things – a restriction that could certainly explain her attraction to wagering in the first place. Permission was granted and with that Ada struck on what she believed was a brilliant idea. She would act as a bookie for her crew.

Ada's favorite horse Voltigeur, was named with a nod to both his sire Voltaire and the Italian electrical physicist Alessandro Volta. Love of literature meeting science in a pattern that ran parallel to a the tumult raging inside Ada's heart. So with the most important race in England approaching, the York Derby Day of 1851, both the Difference Engine and her heart told Ada that Voltigeur would win. She felt so sure that she took the money she'd been given from her gambling syndicate and placed it at a double risk. She bet the same funds twice, once with herself and once with a professional bookie.

Sadly math and science had other forces to contend with on Derby Day – such as flesh and bone. Voltigeur was not made from pure numbers. Voltigeur lost the race.

In an instant Ada's debts opened before her as a chasm. They were tremendous even by today's standards, particularly for a woman who had no income. Within days of the race Ada was being blackmailed by Malcolm for his losses. She pawned her family's jewels so that she and John Crosse could continue gambling. When the hocked items were discovered and recovered by Annabella, Ada pawned them a second time.

It was not long after the Derby disaster that the real dark streak attacking Ada was diagnosed. It was not her father, or her gambling but a uterine cancer gone too far, a diagnosis that Ada's husband decided to keep secret from her.

It seemed Charles and Ada were done and without funding, the Difference Engine would not be finished until long after Charles and Ada were gone, not until 1991 proving far, far too late that Charles Babbage invented the computer and Ada Lovelace wrote the first computer programs.

In the Department of Defenses

Great failures in science such as Charles and Ada's failures with wagering, or Andrew Crosse's failure to generate life spontaneously, or even Ada's doctor's failures to cure her cancer with the medicines they prescribed – huge quantities of red wine and opium – have all been proven to be scientifically wrong-headed and yet it seems that science and technology owe an unpaid debt to these failures who were courageous enough to take risks in the first place.

Here in 2004 I wonder where their kind has disappeared to because I know many, many people who are nobly working on novels or plays or poems in their off hours but I don't have even one friend who is developing a device for teleportation or grafting human DNA with the great blue heron's in her basement after work.

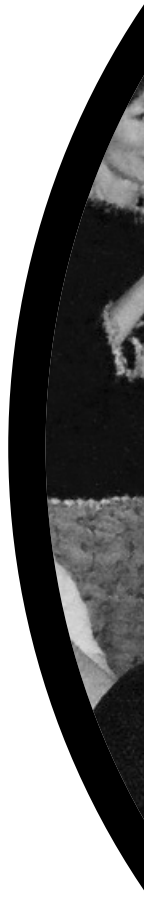
And here is a worry. Could this be because it is becoming nearly impossible to operate a laboratory in this country without receiving money and meddling from either a large corporation or the US Department of Defense? Charles and Ada make me nostalgic for a time when such travesties against the imagination were less blatant.

A year after Voltigeur's defeat, when Ada died at the young age of 36, Babbage began to work on his most astounding and beautiful project yet. It was a formula that would haunt him for the rest of his life because he never could get it quite right. Its poetry is unmatched. The formula was a tool for predicting what the chances were that someone dead would come back to life. Strange and haunting but stranger still is that, in some way Byron's daughter did come back to life. In 1971 the dreaded US Department of Defense created a computer language. This language is named ADA after her and what are the chances of that?

• Open Congress

FLOSS And Art: Open Congress At Tate Britain

Picture: ‘Open Congress’ at Tate Britain, October 2005



• Author : Mary Anne Francis

• Introduction

Open Congress and its questions

As its title indicates, this section is concerned with an event at Tate Britain, Open Congress, which took place across two days in October 2005 and was organized by the Critical Practice Research Cluster at Chelsea College of Art and Design, London. It addressed the possibility of taking the rapidly expanding phenomenon of Free/Libre [and] Open Source Software (FLOSS) and seeing how its methods could apply to art especially, and cultural production more generally. Whereas FLOSS refers to computer programmes/codes that are freely available for anyone to copy, improve and redistribute, we wanted to explore whether and how the 'transport' of FLOSS to cultural production would challenge the ruling paradigms of cultural production. Clearly, the enquiry would centrally engage issues of authorship or creativity, along with issues of the ownership of art. But questions of how a FLOSS (Art) practice affects knowledge (what is known and who knows) and governance (who rules, or wields power and how) were also crucial topics. Indeed, the themes of 'creativity', 'knowledge' and 'governance' organized the Congress' concurrent strands, while plenary sessions addressed topics that cut across all three.

The practice of FLOSS

In playing a part in documenting and evaluating Open Congress, this section of the NODE.London reader extends a key recognition that was realised both in the preparation for the Congress and the Congress itself. Namely: that the topic of FLOSS properly conceived as a reflexive subject, or a method, is not just an object for investigation but potentially, its medium. The debate around the values of 'openness', of collaboration, of breaking down distinctions between producers and consumers – to name a few – are ones that can be pursued at many levels of research and cultural practice. And while the form of an anthology that this section takes is necessarily collaborative in some ways, conventionally at least as a 'togetherness of texts', this section of the anthology went further in its 'open' production process; suggestions for inclusion came from all quarters.

'FLOSS' persists as a structuring motif for our research as the three-stage process of its practice, 'source – copy/ modify/ derive – redistribute and evaluate' has given shape to this anthology. Hence a (sub)section comprising, well, '*source* texts' – for what else to call them? – is followed by a section delineating how these were appropriated at the Congress, either in the form of re-presentations, 'amendments', and 'derived' texts, (for instance, in the question of how FLOSS methods

transpose, or 'port', to use software terminology, to art), and this in turn is logically succeeded by a section which evaluates those copies, amendments, derivatives and their distribution. At this point, if not before, the work of this anthology is poised to return to practice through better understanding and enhanced criticality.

Sub-se(le)ctions

An editorial openness (again, demanded by the reflexive implications of the subject) cues an explanation of why certain texts appear here and others not: indeed the note of 'closure' too rapidly resounds in this selection, and perhaps calls into question the way in which a book, in its traditional form forces crueller limits than online compilations with their hyperlinked archives. Moreover, explanation goes some way to countering the violence of selection that is seldom innocently formal – that is to say, *just* 'for reasons of space'.

So, to rationalise the choice of 'source texts', and to thank David Berry and Neil Cummings for their work in identifying these. This selection could not overlook the 'founding' 'Free Software Definition' and 'The Open Source Definition', at odds with one another, though they are, in crucial details, if happily conjoined in the acronym 'FLOSS'. Nor could it avoid an address to the complexities of 'openness' as a concept and a practice. First, this takes place via texts that look at openness in social practice (groups and organizations) and the way in which the political identifications of FLOSS principles are, in some respects, opaque or unexpected. That leads into a broader address to the political economy of network culture and its structural 'others' in Pasquinelli's piece. This does service here as a token of the vast 'post'-Marxist literature that, often in the wake of Negri and Hardt's *Empire*, regards the intersection of politics and technology – in the age of *the global*. (It is productively put into play, for example, with Eben Moglen's better known but less ambivalent 'dotCommunist Manifesto'). Finally, two articles engage key principles of FLOSS (facilitation of recombination and 'the commons') as they relate specifically to art, or culture in its sense of 'the arts'.

The second part, pertaining to the Congress' proceedings, is merely a documentary snapshot, if hopefully indexical as such. Extensive recordings of the many presentations can be found online, either at **http://www.opencongress.omweb.org/modules/wakka/ocdownloads** or at **http://www.tate.org.uk/onlineevents/archive/open_congress**. The Open Congress site **http://www.opencongress.omweb.org** also documents the extensive research process that preceded the two days in October and which also addressed 'openness' as an issue for

organization. The pieces in this part were chosen for their focus on the central question of the 'porting' of FLOSS methods to art practice and/or the authors' willingness to rewrite their Congress presentations for written publication.

As for the third part: here editorial control is most devolved. A whole host of people involved in the Congress in various capacities were asked if they would like to write short reflective and evaluative pieces on their experience of participation in the event. A number agreed. Comments here are left to readers.

The role of the reader is as central to this collection as it was for its cognate, 'the audience', at Open Congress which quickly dispensed with the latter's passive role and engaged them as 'participants'. Likewise, this Open Congress chapter of this anthology hopes that its components will be re-appropriated – or to use David Berry's concept – seen as a 'tool box', not only as it engineers encounters with different points of view, but also as it aims at a diversity of difference. After Open Congress, it is another opening up of issues that are – or should be – crucial for contemporary critical cultural practice.

● Author : The Free Software Foundation

● The Free Software Definition

We maintain this free software definition to show clearly what must be true about a particular software program for it to be considered free software.

'Free software' is a matter of liberty, not price. To understand the concept, you should think of 'free' as in 'free speech', not as in 'free beer'.

Free software is a matter of the users' freedom to run, copy, distribute, study, change and improve the software. More precisely, it refers to four kinds of freedom, for the users of the software:

- The freedom to run the program, for any purpose (freedom 0).
- The freedom to study how the program works, and adapt it to your needs (freedom 1). Access to the source code is a precondition for this.
- The freedom to redistribute copies so you can help your neighbour (freedom 2).
- The freedom to improve the program, and release your improvements to the public, so that the whole community benefits (freedom 3). Access to the source code is a precondition for this.

A program is free software if users have all of these freedoms. Thus, you should be free to redistribute copies, either with or without modifications, either gratis or charging a fee for distribution, to anyone anywhere. Being free to do these things means (among other things) that you do not have to ask or pay for permission.

You should also have the freedom to make modifications and use them privately in your own work or play, without even mentioning that they exist. If you do publish your changes, you should not be required to notify anyone in particular, or in any particular way.

The freedom to use a program means the freedom for any kind of person or organization to use it on any kind of computer system, for any kind of overall job, and without being required to communicate subsequently with the developer or any other specific entity.

The freedom to redistribute copies must include binary or executable forms of the program, as well as source code, for both modified and unmodified versions. (Distributing programs in runnable form is necessary for conveniently installable free operating systems). It is ok if there is no way to produce a binary or executable form for a certain program (since some languages don't support that feature), but you must have the freedom to redistribute such forms should you find or develop a way to make them.

In order for the freedoms to make changes, and to publish improved versions, to be meaningful, you must have access to the source code of the program. Therefore, accessibility of source code is a necessary condition for free software.

In order for these freedoms to be real, they must be irrevocable as long as you do nothing wrong; if the developer of the software has the power to

revoke the license, without your doing anything to give cause, the software is not free.

However, certain kinds of rules about the manner of distributing free software are acceptable, when they don't conflict with the central freedoms. For example, copyleft (very simply stated) is the rule that when redistributing the program, you cannot add restrictions to deny other people the central freedoms. This rule does not conflict with the central freedoms; rather it protects them.

You may have paid money to get copies of free software, or you may have obtained copies at no charge. But regardless of how you got your copies, you always have the freedom to copy and change the software, even to sell copies.

'Free software' does not mean 'non-commercial'. A free program must be available for commercial use, commercial development, and commercial distribution. Commercial development of free software is no longer unusual; such free commercial software is very important.

Rules about how to package a modified version are acceptable, if they don't substantively block your freedom to release modified versions. Rules that "if you make the program available in this way, you must make it available in that way also" can be acceptable too, on the same condition. (Note that such a rule still leaves you the choice of whether to publish the program or not). It is also acceptable for the license to require that, if you have distributed a modified version and a previous developer asks for a copy of it, you must send one, or that you identify yourself on your modifications.

In the GNU project, we use 'copyleft' to protect these freedoms legally for everyone. But non-copylefted free software also exists. We believe there are important reasons why it is better to use copyleft, but if your program is non-copylefted free software, we can still use it.

See Categories of Free Software for a description of how 'free software', 'copylefted software' and other categories of software relate to each other.

Sometimes government export control regulations and trade sanctions can constrain your freedom to distribute copies of programs internationally. Software developers do not have the power to eliminate or override these restrictions, but what they can and must do is refuse to impose them as conditions of use of the program. In this way, the restrictions will not affect activities and people outside the jurisdictions of these governments.

Most free software licenses are based on copyright, and there are limits on what kinds of requirements can be imposed through copyright. If a copyright-based license respects freedom in the ways described above, it is

unlikely to have some other sort of problem that we never anticipated (though this does happen occasionally). However, some free software licenses are based on contracts, and contracts can impose a much larger range of possible restrictions. That means there are many possible ways such a license could be unacceptably restrictive and non-free.

We can't possibly list all the possible contract restrictions that would be unacceptable. If a contract-based license restricts the user in an unusual way that copyright-based licenses cannot, and which isn't mentioned here as legitimate, we will have to think about it, and we will probably decide it is non-free.

When talking about free software, it is best to avoid using terms like 'give away' or 'for free', because those terms imply that the issue is about price, not freedom. Some common terms such as "piracy" embody opinions we hope you won't endorse. See Confusing Words and Phrases that are Worth Avoiding for a discussion of these terms. We also have a list of translations of 'free software' into various languages.

Finally, note that criteria such as those stated in this free software definition require careful thought for their interpretation. To decide whether a specific software license qualifies as a free software license, we judge it based on these criteria to determine whether it fits their spirit as well as the precise words. If a license includes unconscionable restrictions, we reject it, even if we did not anticipate the issue in these criteria. Sometimes a license requirement raises an issue that calls for extensive thought, including discussions with a lawyer, before we can decide if the requirement is acceptable. When we reach a conclusion about a new issue, we often update these criteria to make it easier to see why certain licenses do or don't qualify.

If you are interested in whether a specific license qualifies as a free software license, see our list of licenses. If the license you are concerned with is not listed there, you can ask us about it by sending us email at **licensing@fsf.org**.

If you are contemplating writing a new license, please contact the FSF by writing to that address. The proliferation of different free software licenses means increased work for users in understanding the licenses; we may be able to help you find an existing Free Software license that meets your needs.

If that isn't possible, if you really need a new license, with our help you can ensure that the license really is a Free Software license and avoid various practical problems.

Another group has started using the term 'open source' to mean something close (but not identical) to 'free software'. We prefer the term 'free

software' because, once you have heard it refers to freedom rather than price, it calls to mind freedom. The word 'open' never does that.

Source: http://www.fsf.org/licensing/essays/free-sw.html

Created by root
Last modified 2005-02-12 05:22 PM

http://www.fsf.org/licensing/essays/free-sw.html

● Author : Bruce Perens

● The Open Source Definition Version 1.9

Source: http://www.opensource.org/docs/definition.php

The indented, italicized sections below appear as annotations to the Open Source Definition (OSD) and are not a part of the OSD. A plain version of the OSD without annotations can be found here.
http://www.opensource.org/docs/definition_plain.php
A printable version of this annotated page is available here.
http://www.opensource.org/docs/def_print.php
A PDF poster of the OSD is also available.
http://www.opensource.org/docs/osd.pdf

Introduction

Open source doesn't just mean access to the source code. The distribution terms of open source software must comply with the following criteria:

1. Free Redistribution

The license shall not restrict any party from selling or giving away the software as a component of an aggregate software distribution containing programs from several different sources. The license shall not require a royalty or other fee for such sale.

Rationale: By constraining the license to require free redistribution, we eliminate the temptation to throw away many long-term gains in order to make a few short-term sales dollars. If we didn't do this, there would be lots of pressure for cooperators to defect.

2. Source Code

The program must include source code, and must allow distribution in source code as well as compiled form. Where some form of a product is not distributed with source code, there must be a well-publicized means of obtaining the source code for no more than a reasonable reproduction cost – preferably, downloading via the Internet without charge. The source code must be the preferred form in which a programmer would modify the program. Deliberately obfuscated source code is not allowed. Intermediate forms such as the output of a preprocessor or translator are not allowed.

Rationale: We require access to un-obfuscated source code because you can't evolve programs without modifying them. Since our purpose is to make evolution easy, we require that modification be made easy.

3. Derived Works

The license must allow modifications and derived works, and must allow them to be distributed under the same terms as the license of the original software.

Rationale: The mere ability to read source isn't enough to support independent peer review and rapid evolutionary selection. For rapid evolution to happen, people need to be able to experiment with and redistribute modifications.

4. Integrity of The Author's Source Code

The license may restrict source-code from being distributed in modified form *only* if the license allows the distribution of 'patch files' with the source code for the purpose of modifying the program at build time. The license must explicitly permit distribution of software built from modified source code. The license may require derived works to carry a different name or version number from the original software.

Rationale: Encouraging lots of improvement is a good thing, but users have a right to know who is responsible for the software they are using. Authors and maintainers have reciprocal right to know what they're being asked to support and protect their reputations.

Accordingly, an open source license must guarantee that source be readily available, but may require that it be distributed as pristine base sources plus patches. In this way, 'unofficial' changes can be made available but readily distinguished from the base source.

5. No Discrimination Against Persons or Groups

The license must not discriminate against any person or group of persons.

Rationale: In order to get the maximum benefit from the process, the maximum diversity of persons and groups should be equally eligible to contribute to open sources. Therefore we forbid any open-source license from locking anybody out of the process. Some countries, including the United States, have export restrictions for certain types of software. An OSD-conformant license may warn licensees of applicable restrictions and remind them that they are obliged to obey the law; however, it may not incorporate such restrictions itself.

6. No Discrimination Against Fields of Endeavour

The license must not restrict anyone from making use of the program in a specific field of endeavour. For example, it may not restrict the program

from being used in a business, or from being used for genetic research.

Rationale: The major intention of this clause is to prohibit license traps that prevent open source from being used commercially. We want commercial users to join our community, not feel excluded from it.

7. Distribution of License

The rights attached to the program must apply to all to whom the program is redistributed without the need for execution of an additional license by those parties.

Rationale: This clause is intended to forbid closing up software by indirect means such as requiring a non-disclosure agreement.

8. License Must Not Be Specific to a Product

The rights attached to the program must not depend on the program's being part of a particular software distribution. If the program is extracted from that distribution and used or distributed within the terms of the program's license, all parties to whom the program is redistributed should have the same rights as those that are granted in conjunction with the original software distribution.

Rationale: This clause forecloses yet another class of license traps.

9. License Must Not Restrict Other Software

The license must not place restrictions on other software that is distributed along with the licensed software. For example, the license must not insist that all other programs distributed on the same medium must be open source software.

Rationale: Distributors of open source software have the right to make their own choices about their own software.

Yes, the GPL is conformant with this requirement. Software linked with GPLed libraries only inherits the GPL if it forms a single work, not any software with which they are merely distributed.

10. License Must Be Technology-Neutral

No provision of the license may be predicated on any individual technology or style of interface.

Rationale: This provision is aimed specifically at licenses which require an explicit gesture of assent in order to establish a contract between licensor and licensee. Provisions mandating so-called 'click-wrap' may conflict with important methods of software distribution such as FTP download, CD-ROM

anthologies, and web mirroring; such provisions may also hinder code re-use. Conformant licenses must allow for the possibility that (a) redistribution of the software will take place over non-Web channels that do not support click-wrapping of the download, and that (b) the covered code (or re-used portions of covered code) may run in a non-GUI environment that cannot support popup dialogues.

Origins: Bruce Perens wrote the first draft of this document as “The Debian Free Software Guidelines”, and refined it using the comments of the Debian developers in a month-long email conference in June 1997. He removed the Debian-specific references from the document to create the ‘Open Source Definition’.

Send questions or suggestions about the website to Steve M.: **webmaster at opensource.org**

• Author : Toni Prug

• The Mirror's Gonna Steal Your Soul

Ideas Can Not Be Free

The Free Software and free culture movements are today's loudest opponents of the wide introduction and implementation of patents and copyright, the main tools of intellectual property regimes. At the heart of their arguments lie the values of sharing and creativity. Yet, obsessed as it is with novelty, innovation and the possibility of bursting creativity, theory coming from and around these movements has remained largely free from an engagement with the history of technology and its role in the development of current civilization. Whatever historical reflection does take place is usually limited to the consideration of US history, and works through a re-examination of American documents, events, organizations and processes. Rare exceptions are partial inclusions of French and British histories and cultures, which are read selectively so as to compliment the dominant US discourses that theorise Free Software/culture movements. In British academia, the same has been said about international relations studies,[1] where "most of the rest of humanity is rated according to its degree of importance to 'western interests'". (Pilger, 2002, p 160) No wonder then, that when economy is mentioned within and around Free Software theory, discussion hardly ever moves beyond free markets, and trade and any kind of production are assumed to be beneficial. The logic of growth through creation is unquestioned and its value inflated. As with history, such narrow theorising falls apart under a global view of economics, as we know from ecological studies: U.S. levels of consumption are unsustainable for the rest of population of the planet, and economic growth (Rivero, 2001, p 87), as currently defined, is neither possible or desirable globally without a complete reconceptualisation.[2]

Taking the global and historic view, what kinds of problems start to emerge with the Free Software and free culture movements?

The United States and Western Europe are currently in a dominant position due to the wealth which allows them to impose economic conditions over the production and trade of less powerful countries, enabling them to access those countries' resources on unequal terms (Shiva, 2005). "Free trade" has never been free in any sense. An essential element of 19th century imperialism was the imposition of trade in terms beneficial for the conquerors. Britain pioneered the forceful opening of trade with China, India, Korea and Japan (Wikipedia, 2005b), while USA and France followed (Wikipedia, 2005a). It left conquerors rich and the other side poor and devastated.[3]

When the liberalisation of trade barriers is enforced through international financial institutions today, some reasons for it are apparent: in the past,

imperialism was a huge economic success for imperialists. But current developments constitute a new imperialist round by different means. Gigantic profits accrue to mostly Western corporations via forced[4] privatizations[5] of state services and infrastructure. Possibly most important of all, and unknown in public debate on trade, "countries' wealth is inversely proportional to their integration in world trade". (Berthelot, December 2005): the more foreign trade there is in countries' gross domestic product (GDP), the poorer the country will end up. In other words, for some countries, acceptance of international trade regimes proposing more foreign trade will make them poorer. When recently speaking at a round of trade talks, the Chief Executive of Hong Kong (formerly called the Governor) said that the choice of free trade as the policy in the 1860s by the government of that time, was done as a matter of convenience.[6] By doing so, like the ideologues of Free Software and its offspring free culture, he falsifies the history.

If one is to look for an account of intellectual property that is striving for consistency with global history, it is in the works of Vandana Shiva and Alternative Law Forum. In contrast, Free Software, even in one of its most radical theoretical versions – "In overthrowing the system of private property in ideas, we bring into existence a truly just society, in which the free development of each is the condition for the free development of all" (Moglen, 2003) – falls short of acknowledging or referencing the conditions of material existence. It is not difficult to imagine the world where people speak and share ideas freely – in the liberal sense – but where global income disparities and exploitation continue unabated.[7]

In other words, even if the intellectual property movement loses its battle to impose strict control through patents and copyright, it doesn't mean that world will be any more egalitarian than it is today. The case made by Vandana Shiva is much more useful in this respect. At its heart lies the question of bare material existence endangered by the radical end of the regime of intellectual property: the introduction of patents on the food that people have depended on for centuries. The direct intervention of Western-controlled capital into the mechanisms for basic survival (Indian farmers versus bio patents) is quite a difference from the intervention of Western companies into the amount of intellectual enrichment, education, freedom to modify and fun available in books, movies, music, and software (Western citizens versus proprietary software and entertainment corporations).

The collapse of Eastern European socialisms seems to have removed the last incentive for Western states to maintain the Cold War-era improved

social contracts. Phenomena like the privatisation of pension funds, health services and education, the roll-back of laws protecting workers and business strategies of outsourcing, are all part of general deterioration of quality of life in the West. Although material existence itself cannot be risked widely, lest it endanger consumption power, insecurity, fear and stress continue to escalate. However, it is difficult to be optimistic on the question of whether such changes will render what is common between Indian farmers and Western citizens visible and enable a discourse of solidarity between the two. Aside from their common fight against patents, the difference in fundamentals between the free software movement and the movement for biodiversity conservation and farmers' rights is as large as the difference in impact of patents and copyright on their material existence. Regulation of the realm of ideas – to which both software and knowledge about seeds belong – is in India a matter of life and death.[8] It has become a matter of life and death through the rapid progress of applied computing and genetics, and how these have been deployed in the Western political imposition of economic rules and regulations. An imposed economic system is also the result of specific regime of knowledge production. Access to this knowledge production is closely controlled through mechanisms such as on-line databases of academic papers maintained by corporate publishers and through largely unaccountable systems of decision-making in business and political realms.

It severely limits, if doesn't make impossible, our ability to understand the possible consequences of the movements that are active under the name of Free Software/culture to speak of the free circulation of ideas without mentioning the cost of production of those ideas, historic processes through which those costs have been meet, and the relations that were established through those processes (domination, exploitation, trade, cooperation, standardisation). The goal of this text is to scratch the surface of the following propositions:

- regulation of the realm of ideas can not be understood correctly through simple opposition of open/closed, nor proprietary/copyleft – a more refined analysis is necessary.
- claims that processes of closing down of knowledge, technology and culture (copyrights and patents) are opposed to processes of opening of those (Free Software/culture/Creative Commons licencing) are wild guesses facilitated by a lack of theoretical investigation and critique. In fact, we can reasonably suspect that these two processes compliment one another.

- operating within the capitalist/liberal theoretical framework (as it largely is at the moment), Free Software/culture could be in a better position to accelerate capitalist exploitation than copyright and patents have so far proved to be.
- current theories within and around Free Software/culture make the above proposition more plausible. If Free Software/culture is to contribute towards a genuinely egalitarian world, detailed examination and rewriting of its current theoretical positions is needed (theory informs practice, if the theory contributes to aims different than what is thought to be the case, so will the practice).
- trade does not have to be beneficial. Trade liberalisation pursued under current terms can be understood as another wave of imperialism that will benefit only capitalists, Western states and their allies

Intellectual Property and History of Domination

The military and economic domination of the world has historically been closely linked with the creation, ownership and application of knowledge, science and technology. Technology was at the heart of both the creation and destruction of all historically successful human societies. In 18th century China, special granaries and the planned distribution of millet and rice was the key to avoiding mass starvation in times of famine or natural disaster. It was the best technology known at the time and "no contemporary European society guaranteed subsistence as a human right to its peasantry (ming-sheng is the Chinese term)" (Davis, 2001, p 281).

At the same time in Europe, starvation was killing millions. Uncontrollable disasters were reintroduced into China in the 19th century, when the superior military technology of Britain, France and America opened China to the unpredictable impact of "free trade".[9] Over the last few decades, Western societies have been transformed through rapid advances in computing, electronic communication and genetics, contributing to their continued dominance on the world stage.[10] Thus the protection of those sources of economic advantage has became one of the most important battles in the world today. Copyright (artistic works and software) and patent (invention, potentially including software) are two core mechanisms used in protection of intellectual property. Patents were first used in Italy in the 15th and England in the 16th century. Queen Elizabeth I used her grants and patent laws to ensure that the creators of the best technology chose England as their place of work: "To attract the superior continental technology from Italy, Germany etc., she assured them full protection of their produce – the

grant of a patent monopoly appeared to be the most effective way to lure the foreigners" (Devaiah, 2004). In this light, the commonly held view that the first enclosure of the commons was that of land (Marx, 1990, ch. 27) is wrong. It was the realm of ideas instead.

Scientific and engineering communities in the West are used to producing their work through mutual sharing. The desire to protect that, as well as a reaction to the extension of copyright software in the 1980s, prompted the Free Software movement. The explicit goals of the Free Software movement were the creation of technology (software) that can be shared and reused without restrictions of copyright (Williams, 2002). Since then, the movement has flourished into a unique historical event, attracting hundreds of thousands participants worldwide. Its results have been many core innovations, many of which are the building blocks of the internet today (Himanen, 2001, Appendix). Over sixty five percent of all websites in the world utilise software produced with Free Software tools.**[11]**

The products of a movement seen as a rebel against corporate greed and control in its early days today sit in the core products of many of the world's largest computing corporations (IBM,**[12]** Hewlett Packard, Oracle). Parallel with those technological developments, electronic storage has evolved into the primary medium for cultural production: texts, music, movies. Today people are exchanging cultural products over networks in their millions, while the media publishing industries take an increasingly aggressive litigious stance towards them. A new movement for free culture – usually perceived as complementary to the Free Software movement – arose in response to these tactics, emphasising the desirability of free sharing in cultural production. However, within these overlapping free software and culture movements, a historical overview of the uneven and exploitative development of world societies is almost non-existent.

The best known critiques of the extensive use of intellectual property in culture are of very limited use for explaining of process within the world economy, since they stem from a capitalist liberal standpoint. Lawrence Lessig, one of founders of Creative Commons project, is one such critic. Even the glimpses of critique that take a global and historic position – mentions of the imposition of an international system of copyright as as a pre-requisite of participation in the international market (Lessig, 2004, p 63) – are already deeply embedded in the liberal ideology of markets: "In a free society, with a free market, supported by free enterprise and free trade, the government's role is not to support one way of doing business against others. Its role is not to pick winners and protect them

against loss. If the government did this generally, then we would never have any progress" (Lessig, 2004, p 127).

This and similar positions generally maintain that copyright should be protected within the law, but that the law itself should be modified to accommodate sharing. Intellectual property as such is accepted without questioning the origins and creation of wealth that enables the contemporary production of science and culture in the West, or indeed its role within wealth distribution in the West. At the same time when the world is being bombarded with "opening of the markets" and other trade liberalisation slogans, the realm of ideas is being foreclosed, and their reproduction and distribution is being placed under strict regimes of control, all under the common name of intellectual property. Such development is consistent with the paradox[13] of the conflict between values and acts that lies at the heart of the liberal economy: "the introduction of free markets, far from doing away with the need for control, regulation, and intervention, enormously increased their range" (Polanyi, 2001, p 147). The corporate patenting of existing crops, rightly identified as biopiracy, is consistent with the history of domination under liberalism. As Foucault demonstrated,[14] liberalism, regardless of its stated core goal of minimal state governance, is interested in the management of biopower and not in opposing it (Dean, 1999, p 101). If liberalism did follow its own core belief of minimal government, it would oppose the increase of governance that happens through patents of seeds essential for survival of large sections of population (the case in India is of basmati rice and other basic food grown for centuries being patented by corporations). Instead, as Dean argues, liberalism is interested in managing indirect governance that occurs through regulated growth of basic agriculture – which constitutes a vast reduction of sovereignty for the people who depend on those foods. In this way liberal governments are achieving the seemingly impossible: by consigning governance to the business processes of international corporations, there's more governance, while the image of a minimal state is preserved; capitalists get new markets and the liberal state gets more support. In the words of a Croatian proverb: "Vuk sit i ovce na broju"! (The wolf is fed and all the sheep are accounted for!).

Beyond the known insight that "social allocation of resources and labour does not, on the whole, take place by means of political direction, communal deliberation, hereditary duty, custom or religious obligation, but rather through the mechanisms of commodity exchange", (Wood, 1995, p 29) we can see from the case of biopiracy that non-authoritarian methods – those not explicitly ordered and executed by the state – deployed to

achieve this kind of governance are immensely political. For without political and legal state intervention, it would not be possible to create and enforce global trade agreements that negatively affect local agriculture and industry in non-Western states. However, complete hegemony (support for international treaties and national laws) isn't any more a necessary precondition for the introduction of this mode of imperialism and indirect governance. Could we not say that liberal parliamentary capitalism – seen as the only possible politics today – itself does not require much popular consent by the masses any more. A large number of hegemony-building intellectuals is freed from fending off communism/socialism and is now focused on perfecting an invisible symbiosis between liberal politics and capitalist economy, an essential appearance to keep up for Western states.

Free Software/culture is held by many who take part in it to be a form of political activism. At the same time, political activists are embracing it widely on all ends of political spectrum. However, regardless of the political positions and assumptions of those who participate in Free Software/culture, or those who support and embrace it, Free Software/culture plays its own role in that invisible symbiosis on which both capitalism and the liberal state thrive today. The primary reason for this is the theory that develops within and around it. Reading texts on intellectual property through history will allow us to: think free software/culture separate from capitalist/liberal discourse; identify what might not be separable; and, finally, to begin to theorise and practice free software/culture in ways truthful to the the core desires we can identify in these formulations.**[15]**

Brotherhood of Ideologies OR Lessig's Creative History

Lawrence Lessig has a liberal story to tell. It features ideas such as the usefulness of free speech (Lessig, 2004, p 156), the free market**[16]** and democracy, but these are deployed as a blanket cover for problematics and points left unquestioned – as if those principles will guarantee positive outcomes, or as if they did so in the past. History is almost entirely kept out, with the exception of elements that directly affirm the line of argumentation – like the tables of how copyright has changed since the 18th century (Lessig, 2004, p 171). The economy is considered only within the idea of cost/profit, to the extent that the arguments for/against copyrights, law (Lessig, 2004, p 201) and technology (Lessig, 2004, p 193) are being justified through a cost/benefit analysis as well. The American cultural tradition, according to Lessig, is that of free culture. In the narrow context of mere existence

of copyright, culture has been more free in the past (as he shows), but what about the ability to participate in that culture, whether it be to enjoy it or produce it? Who could believe that financial inequalities between the richest and poorest that have vastly increased over the last few decades in America are unknown to Lessig? Or the exploding number of hours that families have to work to sustain living standards and educate their children? More to the point of his exclusion of economic conditions from his entire argument about culture is a historic exclusion: was the tradition of the culture he is talking about that of widely known excluded groups – African Americans, Native Americans, white abolitionists, working class, criminals and other dispossessed**[17]** – or was it rather the culture of white people only who themselves were separated, and still are, on the basis of the capital available to them, and even more so time. Not only does Lessig shares Hannah Arendt's "disturbing blind spot for USA history and its systematic racism, violence and exclusion of large number of citizens from political life" (Prug, 2005b) but the crucial category of time is equally missing from his entire analysis.

The category of time has to be understood here in two ways: historic time, and "free time". Lack of reference to historic time enables Lessig to talk about American tradition of free culture, while inclusion of the same illuminates events and processes missing from his account. With the addition of historic time, Lessig's tradition suddenly becomes tradition of culture that includes slaves, Native Americans, immigrants with no other asset but their labour to sell, and poor Americans in general. It is important to remember that as recently as the 1960s in some states in America interracial marriages were forbidden, the lynching of black people and white activists supporting them was still happening, and literacy tests were used as effective means of preventing most black people from voting, until they were banned in 1965 – all of that prescribed by the letter of law (yes, Lessig's is a lawyer). At one point, "it became a crime even to provide a slave with paper and pen" (Losurdo, May 2005). Such is the tradition of free culture that Lessig celebrates and longs for. But that is not all. Inclusion of free time, time on which middle classes have thrived in booming periods of capitalism, is equally revealing and matters for establishing who benefits from the "freedoms" enshrined by legal initiatives such as Creative Commons. As the availability of time free from labour-selling and life administration decreases, so does the ability to participate in culture. In other words, freedom of culture is proportional to one's free time, and free time is proportional with one's wealth. UNICEF's centre for child poverty has a

regular report on the situation in rich countries, where "the concept of relative child poverty is merely measuring inequality" UNICEF, June 2000, p 7). The USA has been consistently sitting at the top of that report, next to the UK, with inequality rising since 1970 (UNICEF, May 2005). Hence the only moment of weakness towards the realities of American life Lessig allows himself is one he manages to get wrong: "Is the radical shift away from our tradition of free culture an instance of America correcting a mistake from its past, as we did after a bloody war with slavery, and as we are slowly doing with inequality?" (Lessig, 2004, p 12) Within a capitalism that produces this increasing inequality, and the declining availability of free time, it is the category of "freedom" – be it Lessig's tradition of free culture, free society, free markets, free trade or free speech – that plays a central role. In Lessig's analysis, the exclusion of the categories of time is what has enabled the constitution and operation of the the category of "freedom".

Finally, we return to the beginning, to the preface of *Free Culture*, where the political dimension is dismissed in a stroke by defining the subject "we", the subjects of the book's analyses and prescriptions, as a subject unaligned with either Left or Right (Lessig, 2004, Preface). We are assured that "This is the United States" and due to the principle of free speech and criticism that prevails there, it will all work out just fine in the end: "criticism is likely, in turn, to improve the systems or people or ideas criticized" (Lessig, 2004, p 156). So, if we give everyone in the world regular access to a computer on the internet and a blog, the world is likely to, via free speech and criticism, improve itself? Speechless. While we're waiting for a critical assessment of the role of free speech in the Free Software/culture movements and theories, we fear that the kind of free speech Lessig is talking about could turn out to be as free as his tradition of free culture, once exposed to categories of time.

Piracy: Blood Crystallized as Diamonds

To start with, the United States had a markedly different attitude to copyright while it was a developing country. Up to the late 19th century, copyright was seen to "be disadvantageous, that it would suck money out and wouldn't do much good" (Stallman, 2001). One of the historically documented methods that the United States used to develop its foreign trade was the use of military force to persuade other countries to sign treaties that condoned what they considered to be piracy (Wikipedia, 2005a). Today, as a champion of capitalism, it habitually implements, both domestically and abroad, a system characterised by intellectual property orthodoxy. This is experienced as expropriation by workers in

firms: “What they create is immediately appropriated by their employers, who claim the fruit of their intellect through the law of patent, copyright, trade secret and other forms of ‘intellectual property’” (Moglen, 2003). IP orthodoxy outdoes itself – by patenting seeds that have been used for hundreds of years as an essential part of diets locally and worldwide, thus falsifying the purpose of patents (patents are intended to reward innovation and there’s no innovation in these cases) – and then commands legal respect from international financial institutions for these techniques.

But ‘piracy’ is a loaded term. American consumption of resources and attendant production of waste vastly exceeds, by tens of times on average, the rest of the world. Is this not a piracy of the finite resources of the Earth’s ecosystem, and one that spurns any attempts at regulation by international bodies?[18] Its hypocritical approach towards international organisations, like the UN, is consistent with the strategy that was set after WWII, and is worth extensive quotation:

> ...the national prejudices, the irrational hatreds and jealousies would be forced to recede behind the protecting curtain of accepted legal restraint, and that the problems of our foreign policy could thus be reduced to the familiar terms of parliamentary procedure and majority decision. The outward form established for international dealings would then cover and conceal the inner content. And instead of being compelled to make the sordid and involved political choices inherent in traditional diplomacy, we could make decisions on the lofty but simple plane of moral principle and under the protecting cover of majority decision. (Kennan, 1948)

Thus Lessig is completely off the mark when he writes that USA used to be a nation of pirates.[19] In many aspects, it still is. For the world’s most powerful, piracy was, and still is, another tool of domination. Advanced military technology enabled, and still does enable, imperialists to extract wealth from those less technologically able without consent, as we currently see in Iraq. Today, technology that penetrated and connected homes of many (in which military technology and influence played and continues to play a role) enables people to obtain cultural products, a form of wealth, without consent too. By pirating, peoples of the world are being truthful to the lessons of the history: technology can jump over the politico-economic bridges built to negotiate wealth distribution and reconfigure the relations and processes through which that gets

done – all in favour of the technologically advanced. Like Chinese in the Opium Wars of the 19th century, if they can't defend themselves, corporations in the control of culture will have to negotiate.

A Glance at the MPAA Propaganda

In a speech on June 14th 2005, Dan Glickman, the CEO and President of the Motion Picture Association of America, regaled his audience with his support for free market capitalism, dislike of communism and tributes to the former President Reagan. (Glickman, 2005) The MPAA wins awards for its community projects supporting the education of children,**[20]** feeding the starving,**[21]** and its solidarity with low-paid workers.**[22]** Making sure that priorities are clearly set from an early age, it even goes to the lengths of organising a training program – available for all of the one hundred thousand scouts in Hong Kong – that introduces "the world's first Scout merit badge program focused on respect for and protection of intellectual property" (Motion Picture Association, 2005a). Twenty-five trainers were trained in the initial "train the trainers"' course on 9th April 2005. Having rightwing free market fundamentalists, charitable Scoutmasters and communist haters as the enemies of the free culture movement could be a large contributing factor to the prevailing sense that the movement itself must be on the some kind of oppositional political terrain. And yet . . .

Really, how far is Lessig/Creative Commons from Gluckman/MPAA? Put the question of copyright and patents aside – forget the open/closed dichotomy for a moment: how different would the world constructed according to beliefs of these two be? Remember what Lessig said about free speech and what it leads to: has the world really changed since most people in the richest states have had regular access to a computer on the internet and a blog, if they so desired?

Lessig and Gluckman are both firm supporters of "free trade", the core hegemonic concept through which the battle for political and economical domination of the capitalism and the West has been forged. Where they differ are the means by which they want capitalism to develop and spread. Although some of the means that Lessig advocates do hold potential for the development of genuine egalitarian societies, it is only by the separation of those potentials from the ideology of capitalism that a possibility for their inclusion in the development of such societies might emerge. For that to happen, further detailed examination and separation is required.

Copyright and the Rise of Users-publishers

It has been argued that, since copyright has been created to regulate the right to publish and sell the work, "The shift in focus has gone from regulating publishers of information to regulating users of information" (Lindenschmidt, Spring/Summer 2004, p 4). However, what is missed here is the fundamental difference in the cost of reproduction of work and the function of publishing in the past and today. The primary function of publishing is to reproduce the work and manage its further distribution.[23] With books, the primary carrier of intellectual work in use at the time when copyright was created, the user was unable to create copies at low cost. Even if copies were produced, offering those newly produced copies for distribution was even more costly. On the other hand, with electronic media, the user can both reproduce the work and offer it for further distribution at extremely low cost. In short, the primary function that publishers used to perform can now be done by the end users at such low cost that many users decide to do so. Thus, saying that the user is being regulated misses what is actually happening: large numbers of users have taken the opportunity to perform the function of publishers at incredibly low cost and became users-publishers. In doing this, they are perceived as an economic threat by the publishing industry. What old publishers used to sell, user-publishers distribute for no charge. In this new state of distribution, the core function missing from practices of user-publishing is charging for the work and distributing capital – the role that classical publishers historically fulfilled. Classical publishers have agreements with producers of work, user-publishers do not. Once this is changed, and a model for agreement between producers and user-publishers that can satisfy both sides is found, classical publishing could lose its purpose (their public relations and marketing roles could remain, as a leverage of branding built before the prevalence of users-publishers). As there is no widely accepted agreement at the moment, classical publishers can use their position to depict users-publishers as pirates. Creative Commons licences could be a way for such agreements to start being forged, but a remuneration standard remains to be resolved on a wide scale.

In a Metapolitical Way: Freeing the Free Software

As a pointer for further investigation, it is in the work of Alain Badiou where we find the structure and concepts that encounter the most difficult and decisive challenges in the unbundling of Free Software/culture and capitalism/liberalism. Crucially, unbundling can proceed as a project of new construction of the the domination of non-domination – what

Badiou refers as the Marxist hypothesis that posits this premise as the task of egalitarian politics (Toscano, 2004, p 141). In other words, although the best known historic model of the domination of non-domination is the dictatorship of proletariat, this way might be surpassed. An opening for thinking of anarchist models that are at the core of free software (voluntary association and cooperation between self-managed co-workers) is visible in Badiou's ethics, which is "essentially incommensurable with the whole Kantian register of legality, duty, obligation and conformity" (Hallward, 2001, p 21). His fundamental belief in the possibility for radical change "for the people and the situations they inhibit to be dramatically transformed by what happens to them" (Hallward, 2004, p 2); his insistence both on departure from fixed modes of representation and class antagonism as the key binding principle (Toscano, 2004, p143); his vision of possibilities for social restructuring according to the egalitarian maxims which the State, in its current liberal economic form, preempts (Badiou, 2005, p 141-152) are all reasons for us to believe that if a genuinely emancipatory politics compatible with anarchist modes of free software is to be thought today, Alain Badiou, his colleagues and critics stand on the path to follow. Politics, Badiou teaches us, is not confined to the modes that we're used to thinking: liberal democracy, parliament, political parties.

Instead, what is presented from each situation is never the complete state of every situation, there are always more parts then elements. This is the question of power, and power of the State is always superior to that of situation: "Empirically it means that whenever there is a genuinely political event, the State reveals itself" (Badiou, 2005, p 145). Politics reveals the repressive dimension of the State, but more importantly, and essential in the case of free software/culture, reveals a measure for mostly invisible excess. By doing so, it puts the State at a distance. In the time without politics, people are resigned, because the State is not at distance and measure of its power is errant. "People are held hostage of this errancy". Measuring excess, interrupting errancy, measuring the statist power: this is politics. Metapolitics is philosophy through which we can discern what politics is, and thus what is political. Through metapolitics, "the task of philosophy to expose a politics to assessment" (Badiou, 2005, p 149) can be fulfilled, and free software/culture can be freed from the claws of the matrix of inequality which extends control over it today. Lessig's theory is indeed political. It is liberal, capitalist, non-egalitarian and based on modes of domination which foster an ideology based on concepts of freedom deprived of categories of time. Is not the following: "Non-egalitarian consciousness

is a mute consciousness, the captive of an errancy, of a power which it can not measure" (Badiou, 2005, p 149) and "the political event interrupts the subjective errancy of the power of the State. It configures the state of the situation. It gives it a figure; it configures its power; it measures it" (Badiou, 2005, p 149) an invitation to think openness and transparency (on which the production of free software prides itself and through which it thrives) in a political way? This is how a sense of 'freedom' of Free Software could be obtained in the only way possible we know of today, in a metapolitical way.

The constructive direction of core propositions of this text is that the path of reconciliation of marxism and anarchism (Karatani, 2005, p165-185) is important, and that tools available in marxist theory are as precious for the egalitarian society that those two can bring about, as the organisational methodologies of anarchism and Free Software are for the workable implementation of such society. But in order to show the possibility and necessity of such path of reconciliation on the political left, it is a critical assessment of the theory and practice of Free Software that is needed first. In other words, these propositions are a call for marxism and anarchist theorists and practitioners to inform each other.

The Diamond Sea
time takes its crazy toll
and how does your mirror grow
you better watch yourself when you jump into it
'cause the mirror's gonna steal your soul
...

look into his eyes and you will see
that men are not alone on the diamond sea
sail into the heart of the lonely storm
and tell her that you'll love her eternally

...

look into his eyes and you shall see
why everything is quiet and nothing's free
I wonder how he's gonna make her smile
when love is running wild on the diamond sea

(Sonic Youth, 1995)

As Slavoj Zizek pointed out on many occasions, the only true act is the act of taking the risk fully, with all possible implications, and not relying on insurance of the Big Other. Free Software has been called a political philosophy (Stallman, May 2001). However, those who see it as such, and who think that their political stance has been reflected in it, should consider that longer that they postpone critical examination of the theory within and around Free Software, more they are in a risk of disappointment. If this is left undone too long, the mirror for those on the political left might, indeed, steal their soul.

Tables, World Economy 18th-20th century
Tables are copied from from Mike Davis' book *Late Victorian Holocaust*.

Shares of World GDP

	1700	**1820**	**1890**	**1952**
China	23.1	32.4	13.2	5.2
India	22.6	15.7	11.0	3.8
Europe	23.3	26.6	40.3	29.7

Source: Angus Maddison, *Chinese Economic Performance in the Long Run*, Paris 1998, p 40.

Shares of World Manufacturing Output, 1750-1900 (percent)

	1750	**1800**	**1830**	**1860**	**1880**	**1900**
Europe	23.1	28.0	34.1	53.6	62.0	63.0
UK	1.9	4.3	9.5	19.9	22.9	18.5
Tropics	76.8	71.2	63.3	39.2	23.3	13.4
China	32.8	33.3	29.8	19.7	12.5	6.2
India	24.5	19.7	17.6	8.6	2.8	1.7

Source: Derived from B.R.Tomlinson, 'Economics: The Periphery', in Andrew Porter, ed., *The Oxford History of the British Empire: The Nineteenth Century*, Oxford University Press, Oxford 1990, p 69 (Table 3.8).

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.footnotes

... studies**[1]**

If one can judge according to Goldsmiths College in London, political science is no different. I left it for sociology after only a year of studying, due to the unbearable bias of lecturers and textbooks used in the curriculum towards capitalist and Western interests. Most annoying and surprising – I guess my starting positions were naïve – was the teaching of neo-conservative ideology under the guise of liberal political science (Prug, 2005a).

... reconceptualisation**[2]**

"When growth increases poverty, when real production becomes a negative economy, and speculators are defined as 'wealth creators', something has gone wrong with the concepts and categories of wealth and wealth creation. Pushing the real production by nature and people into a negative economy implies that production of real goods and services is declining, creating deeper poverty for the millions who are not part of the dot.com route to instant wealth creation ... globalization destroys local economies and destruction itself is counted as growth" (Shiva, 2000).

... devastated**[3]**

Mike Davis shows that it wasn't just economy, but climate change too that was result of imperialism. See his *Late Victorian Holocausts: El Nino Famines and the Making of the Third World* for an account.

... forced**[4]**

Gramsci's dictum about the formation of hegemony(Gramsci, 1971, p 12) – that when hegemony is thwarted by lack of consensus and overabundance of regulation, corruption is ready to fill the gap – can be seen in the processes of privatisation (Monbiot, 2000).

...privatisations**[5]**

Profits from privatisations come in many distinct, but complementary, ways: a) infrastructure services companies (water, energy, telcos) take on a monopolistic, or monopolistic by other means (price fixing), position; b) management or dismantling of health, pension and life insurance funds previously managed by the state; c) reduction of workforce cost, due to reduction of workers' power (undermining of of unions, deregulation of employment laws, internationalised competition); d) banking: private bank owners often gain direct access to governments whose sovereignty is greatly reduced without state owned banks; e) siphoning of cash through sale of outdated technologies and unnecessary services directly to newly acquired local companies.

... convenience**[6]**

"The policy choice of free trade, I suspect, was more a matter of convenience than intellectual reflection or ideological conviction. Even if they had wanted to, the people governing Hong Kong in the 1860s, thousands of miles from London and in those harsh circumstances and conditions, would unlikely have found the resources to manage and regulate trade" (Tsang, 2 December 2005).

... unabated**[7]**

Can not the scenario also be that initiatives like Open Business: "Open Business is a platform to share and develop innovative Open Business ideas – entrepreneurial ideas which are built around openness, free services and free access" **http://www.openbusiness.cc** – become the model on which future

capitalism will thrive?

... death**[8]**

Many of Shiva's texts have references to epidemic of suicides in India due to destruction of farmers' lives:

> "Because of cheap food and fibre being dumped by developed nations and lessened trade protections enacted by the government, farm prices in India are tumbling, which means that the country's peasants are losing $26 billion U.S. each year. Unable to survive under these new economic conditions, many peasants are now poverty-stricken and thousands commit suicide each year" (Shiva, 2005).

... trade**[9]**

" . . . the Whig view of history deletes a great deal of very bloody business. The looms of India and China were defeated not so much by market competition as they were forcibly dismantled by war, invasion, opium and a Lancashire-imposed system of one-way tariffs . . . it is indisputable that from about 1780 or 1800 onward, every serious attempt by a non-Western society to move over into a fast lane of development or to regulate its terms of trade was met by a military as well as an economic response from London or a competing imperial capital (Japan is exception)" (Davis, 2001, p 295). See Tables in Appendix.

... stage**[10]**

The Frankfurt School's point about the total administration of the society that is in front of us – "The greater the conquest of nature, the weaker man's power over his own social and private existence, the greater the conquest and knowledge of man's own nature, in psychology and sociology, the easier the human being becomes the object of total administration and management" (Marcuse, 2001, p 87) – is a vast subject that remains to be positively theorised. The question to pose is the Leninist one: Knowledge – yes, but for whom? to do what?

... tools**[11]**

Regular statistics on this are at **http://news.netcraft.com/**.

... IBM**[12]**

IBM was again the biggest recipient of patents (2941) for the year 2005, **http://www.uspto.gov/**. Yet it plans to release 500 of these under free software licences. In other words, its business strategy is that partial opening is more beneficial for the business than a completely closed model of intellectual property. We can look at that as a big win for the Free Software community, or/and as an example of how open model is not necessarily opposed to the closed one.

... paradox**[13]**

Its roots can be seen in England at the beginning of 19th century in the 'Six Laws' (introduced in 1819), Poor Laws (introduced in 1832 and 1834) and general rise in regulations and bureaucracy.

... demonstrated**[14]**

"The finality of government resides in things it manages and in pursuit of the perfection and intensification of the processes it directs, and the instruments of government, instead of being laws, now come to be a range of multiform tactics" (Foucault, 2001, p 211).

... desires**[15]**

A process of identification of core desires ought to proceed after the first step of separation has been completed. Two assumptions I'm making here – to voluntarily create in cooperation and to share are among core desires on which free software/culture thrives; only genuinely egalitarian and emancipatory political projects can remain truthful to these – should be examined in detail and

challenged.

... market**[16]**

Lessig tells us that the free market will, in line with laws that Adam Smith taught us, through “lessons that America has been teaching the world for generations – that free markets free people”, result in prosperity for African and Asian countries (Lessig, May 2004).

... dispossessed**[17]**

“A French abolitionist (Victor Schoelcher) visits the USA in the same time as Tocqueville. But Schoelcher speaks not of the American democracy but of a country which is the worst tyranny: not only the blacks, the whites abolitionists too suffer a ferocious oppression; the whites abolitionists are considered and reated as traitors to the white race; they are blacks themselves” (Losurdo, May 2005).

... bodies**[18]**

This isn’t a very useful line of critique, since, like with the UN, the United States is likely to sign agreements on climate change and learn to use them to get on with their business covertly.

... pirates**[19]**

“We may have been born a pirate nation, but we will not allow any other nation to have a similar childhood” (Lessig, 2004, p 63).

... children**[20]**

“Kids are subject to everything from being exposed to pornography or tempted by piracy” (Motion Picture Association, 2005b).

... starving**[21]**

“As Agriculture Secretary, I worked with many fine people who were committed to exporting not only critically needed food, but also American know-how to help feed starving people. While now I am involved more in exporting American culture through the magic of the movies than I am involved with agriculture . . . “ (Motion Picture Association, 2005c)

... workers**[22]**

“Piracy also hurts the hundreds of thousands of individuals, whose jobs depend on a vital movie industry, including sound and lighting technicians, carpenters and theatre and video store employees” (Motion Picture Association, 2005d).

... distribution**[23]**

Proponents of capitalism will probably argue that it is profit that is the primary function of publishing.

About this document ...

The Mirror’s Gonna Steal Your Soul

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• The Packet Gang

Preface

In this essay, originally produced for *Mute* magazine **http://www.metamute.org** in 2004, I was attempting to answer some specific problems. During this period, I had been very involved in the 'anti-capitalist' or 'anti-globalisation' movement, and had noted the intense excitement and expectation accruing around the organisational idea of 'openness'. We in the social movements, we told ourselves and others, were 'open'; we used all the virtues of networked organisation to our advantage, and we didn't need 'their' closed-ness, just as we didn't need 'their' proprietary attitudes.

I knew that that this was not the complete truth, and that it didn't even begin to specify sufficiently the complex mixed economy of open and closed organisation that we 'activists' were deploying in organising events such as the anti-G8 summits in Genoa and Geneva. In fact I believed, and still do, that a relatively small number of individuals took a good deal of responsibility for the ideas, motifs and organisational strategies that defined this period of engagement.

This essay was intended as a first demonstration of how the 'gang'-like structures that lurk beneath the 'idea of openness' are inevitable. The second part, now lost in backup failure, is still to be recomposed; but there I was going to attempt to discuss the potential rehabilitation, or at least sensible recognition, of gangsterism in the social movements and indeed, across all organisational structures. My text here, of course, was Felix Guattari's material on 'transversality'.

The purpose of this introduction is not however a rambling rehash. I want to say that while I stand by everything written here, it came at the end of a long period of intense engagement with large (counter-) organisational systems. The air of frustration and cynicism evident in 'The Packet Gang' was concurrent with my personal frustration at how we were spending our energies within the social movements. I needed to work with smaller, more defined aims, goals and groups in which energy and intent was not so easily dissipated. I have found that a lot of the frustrations I experienced with working with groups of hundreds have diminished significantly in groups of two to twenty. This, of course does nothing save bolster my (possibly perverse) idea that small 'gangs', founded on love and trust – and sharing defined goals rather than ill-defined abstract ideas – can be satisfying and successful forms in which to work. But it does offer a simple 'solution' to the 'problem' of organisation: think small.

My work today continues to explore the use of open distribution structures; in particular I am exploring with a few others the crucial questions of remuneration and recompense through practically realized working

structures. I no longer throw the groups I am involved with 'open' in every part of their organisation, and I'm sure that they're the better for that; but I do still think that openness is under-thought and under-utilised across the board of cultural production. Above all, I want to make plain my optimism for non-proprietary modes of production and distribution, which I think may not be evident in the text that follows.

13th Jan 2006

1. The Idea Of Openness

Since the founding of the Free Software Foundation in 1985 by Richard Stallman and the Open Source Initiative in 1998 by Eric Raymond, the idea of openness has enjoyed some considerable celebrity. Simply understood, open source software is that which is published along with its source code, allowing developers to collaborate, improve upon each other's work, and use the code in their own projects. The cachet of this open model of development has been greatly increased by the high-profile success of GNU-Linux, a piece of 'free-as-in-libre and open source software' (FLOSS). But, taken together with the distributed co-composition offered by, for example, the wiki architecture,[1] and the potential of peer-to-peer networks like Bittorrent and Gnutella,[2] a more nuanced and loose idea of openness has suggested itself as a possible model for other kinds of organisation. Felix Stalder of Openflows identifies its key elements as: "[…] communal management and open access to the informational resources for production, openness to contributions from a diverse range of users/producers, flat hierarchies and a fluid organisational structure".[3]

This idea of openness is now frequently deployed not only with reference to composing software communities but also to political and cultural groupings. For many, this is easily explained: FLOSS' 'self-evident' realization of a "voluntary global community empowered and explicitly authorised to reverse-engineer, learn from, improve and use-validate its own tools and products", indicates that "it has to be taken seriously as a potential source of organising for other realms of human endeavour".[4] In these circles, openness is now seen as

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[1] See 'What is Wiki'? at **http://wiki.org/wiki.cgi?WhatIsWiki**

[2] See **http://www.zeropaid.com** for a review of current peer to peer and fileshare services.

[3] Felix Stalder, 'One-size-doesn't-fit-all. Particulars of the Volunteer Open Source Development Methodology', available at **http://openflows.org/article.pl?sid=03/10/25/1722242**.

[4] Adam Greenfield, 'The Minimal Compact: Preliminary Notes on an "Open Source" Constitution for Post-National Entities', **http://www.v-2.org/displayArticle.php?article_num=339**.

'paradigmatic.' Computer book publisher and guru Tim O'Reilly's presentation at the Reboot conference in 2003, entitled *The Open Source Paradigm Shift*, placed FLOSS at the vanguard of a social phenomenon whose time, he said 'had come'; its methods of ad-hoc, distributed collaboration constituting a 'new paradigm' at a level consistent with, for example, the advent of the printing press and movable type.**[5]**

Such accounts of the social-political pertinence of the FLOSS model are increasingly common. A recent essay by activist Florian Schneider and writer Geert Lovink, for example, exhibits the premature desire to collapse FLOSS-style open organisation into a series of other political phenomena: "freedom of movement and freedom of communication [...] the everyday struggles of millions of people crossing borders as well as pirating brands, producing generics, writing open source code or using p2p-software".**[6]**

More soberly, Douglas Rushkoff has argued recently in a report for the Demos think-tank that 'the emergence of the interactive mediaspace may offer a new model for cooperation': "The values engendered by our fledgling networked culture may [...] prove quite applicable to the broader challenges of our time and help a world struggling with the impact of globalism, the lure of fundamentalism and the clash of conflicting value systems [...] One model for the open-ended and participatory process through which legislation might occur in a networked democracy can be found in the open source software movement".**[7]**

Rushkoff does not try to draw direct parallels between FLOSS and other forms of activity in the manner of Schneider and Lovink, but argues equally problematically that the model used in open source software-composing communities could be usefully applied to democratic political organisation. "A growing willingness to engage with the underlying code of the democratic process", he contends, "could eventually manifest in a widespread call for revisions to our legal, economic and political

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[5] Tim O' Reilly, 'The Open Source Paradigm Shift', Keynote, Reboot 2003, available at **http://www.reboot.dk/reboot6/video/**.

[6] Florian Schneider, 'Re: <nettime> Reverse Engineering Freedom', nettime, Tue, 14 October 2003, available at **http://www.mail-archive.com/nettime-l@bbs.thing.net/msg01248.html**. See also Florian Schneider and Geert Lovink, 'Reverse Engineering Freedom', in *Make Worlds*, 2003. Available at **http://www.makeworlds.org/?q=book/view/20**.

[7] Douglas Rushkoff, 'Open Source Democracy: How Online Communication Is Changing Offline Politics', Demos, 2003 **http://www.demos.co.uk/opensourcedemocracy_pdf_media_public.aspx**.

structures".[8] Clearly, then, the idea of openness has appeal across rather different constituencies – here we already have both the reformist-liberal and the radical activists claiming openness as their ally. Indeed, as ICT theorist Biella Coleman suggests, the widespread adoption and use of the idea of openness and its 'profound political impact' may precisely be contingent on its peculiarly transpolitical appeal. "FLOSS," she writes, resists "political delineation into the traditional political categories of left, right or centre [...but] has been embraced by a wide range of people [...] This has enabled FLOSS to explode from a niche and academic endeavour into a creative sphere of socio-political and technical influence bolstered by the internet".[9]

But the broad-church appeal of the idea of openness suggested by FLOSS need not necessarily be a cause for celebration, especially since many of the constituencies making use of it conceive of themselves as fundamentally opposed. Can the idea of openness these divergent constituencies embrace really be the same? And how can it be that they consider it sufficient to their very different aims?

The chief purpose of this article is not to answer these questions by examining the 'self-evident' truths of open source production. Such studies are already being carried out in forums like Oekunux **http://www.oekonux.de**; Gilberto Camara, Director for Earth Observation at Brazil's National Institute for Space Research, has also published research that challenges some key tenets of the FLOSS model. His research exposes the possibility that in many cases FLOSS does not innovate significantly original software, or sustain projects outside of corporate or large scale academic involvement. Instead this article seeks to address the intense political expectation around open organisation among diverse elements of the diffuse activist organisations which, post-Seattle, have been loosely referred to as 'the social movement' or 'social movements'. In referring to the social movement, this article concerns itself primarily with groups such as People's Global Action, Indymedia, Euraction Hub and other such non-hierarchised collectives; it does not have in mind more traditionally structured organisations like the social forums, Globalise Resistance or so-called 'civil society' NGOs.

In the social movement thus defined, openness is clearly becoming a constitutive organising principle, as it connects with the hopes and desires circulating around the idea of the 'multitude', a term whose

[8] Rushkoff, ibid.

[9] Biella Coleman, 'Free and Open Source Software', in *Survival Kit, Part One* (proceedings of RAM4).

post-Spinozan renaissance has been secured by Michael Hardt and Antonio Negri's book *Empire*. The multitude is a defiantly heterogeneous figure, a collective noun intended to counter the homogenising violence of terms such as 'the people' or 'the masses'. For many thinkers in the post-Autonomist tradition, this multitude is a way of conceiving the revolutionary potential of a new 'post-Fordist proletariat' of networked immaterial labourers. In certain circuits within the social movement, pace Schneider and Lovink, FLOSS organisation is seen as the techno-social precondition of a radical democracy in becoming. However tenuous this assemblage may be, it goes some way to explaining the way in which FLOSS and openness have become quite central rhetorical terms in the struggle to produce an identity for the networked, anti-capitalist movement. But it is also true that certain characteristics of the idea of openness have genuine organisational influence within the movement. A study of openness in this context is useful in three degrees: first, to the social movement itself 'internally'; second, to 'outsiders' wanting to gain a good understanding of 'what it is'; third as a critique of those who would seek to represent the movement with, or attempt to manipulate it through, a particular deployment of the idea of openness.

2. 'The Revolution will be Open Source'

It is too easy to make sweeping generalisations about the ways in which the social movement realises the idea of openness. Instead we need to look at the ways in which the kind of openness identified in FLOSS may practically correspond to specific moments of organisation in the social movement. Based on my direct involvement in the social movement in contexts such as the anti-G8, No Border Camps, PGA meetings and various actions, I think it is possible to see correspondences in five key areas:

Meetings And Discussions

The time and location of physical meetings are published in a variety of places, online and off. The meetings themselves are most often open to all comers, sometimes with the exception of 'traditional' media. Although often no recordings or pictures are allowed at meetings, there is rarely any other vetting of those who attend. Anyone is allowed to speak, although there is often a convenor or moderator whose role is to keep order and ensure progress. Summaries of discussion are often posted on the web (see Documentation below) where they can be read by those unable to attend a physical meeting or other interested parties.

The same is true of IRC meetings, which anyone may attend, and for which the

'logs' are usually published (see, again, Documentation). Net-based mailing lists, through which much discussion is carried out, are usually open subscription and, as with physical meetings, those joining are not vetted.

Decision-Making

Most often, anyone present at a meeting may take part in the decisions made there, although these conditions may occasionally be altered. Currently, the majority of decision making is done using the 'consensus' method, in which any person present not agreeing with a decision can either choose to abstain or veto ('block'). A block causes an action or decision to be stopped.

Documentation

In general, documents that form organisational materials within the movement are published online, usually using a content management system such as wiki. In most cases, it is possible for even casual visitors to edit and alter these documents, although it is possible to 'roll back' to earlier versions in, for example, the case of defacements.

Demonstrations

The majority of demonstrations are organised using the above methods. Not only is their organisation 'open' but, within a certain range of political persuasions, anyone may attend. Self-policing is not 'hard' but 'soft'.

Actions

Even some 'actions' – concentrated interventions usually involving smaller numbers – are 'open', using the above methods to organise themselves and, if the action is ongoing, even allowing new people to participate.

Thus some key moments within the social movement share certain characteristics with the FLOSS model of openness. Indeed, the movement deploys many of the same tools as FLOSS communities i.e., wiki, IRC and mailing lists to organise itself and carry out its projects. But its characteristic uses of openness are not enshrined in any formal document. Rather, they have developed as a way of organising that is tacitly understood by those involved in the social movement: an idea of openness that, to differing degrees, inflects its organisation throughout. Although the principles are not rigidly followed, there is often peer criticism of groups who do not declare their agendas or who act in a closed, partisan fashion, and, generally speaking, any group or project wanting to keep itself closed has an obligation to explain its rationale to other groups.

Some of these attitudes and principles derive from the People's Global Action (PGA) charter, an influential 'instrument' constituting a visible attempt to organise around networked openness. The organisational philosophy of PGA,**[10]** which was formed after a movement gathering in South America in August 1997, is based on 'decentralisation'. With "minimal central structures", the PGA "has no membership" or "juridical personality": "no organisation or person represents" it, nor does it "represent any organisation or person". It is a "tool", "a fluid network for communication and co-ordination between diverse social movements who share a loose set of principles or 'hallmarks' [...] Since February 1998 [...] PGA has evolved as an interconnected and often chaotic web of very diverse groups, with a powerful common thread of struggle and solidarity at the grassroots level. These gatherings have played a vital role in face-to-face communication and exchange of experience, strategies and ideas [...]".**[11]**

The PGA has attempted to assemble itself around a set of 'hallmarks' which have been updated at each key meeting. These are currently as follows:

1. A very clear rejection of capitalism, imperialism and feudalism; all trade agreements, institutions and governments that promote destructive globalisation.
2. [... A rejection of] all forms and systems of domination and discrimination including, but not limited to, patriarchy, racism and religious fundamentalism of all creeds. [...An embracing of] the full dignity of all human beings.
3. A confrontational attitude, since we do not think that lobbying can have a major impact in such biased and undemocratic organisations, in which transnational capital is the only real policy-maker.
4. A call to direct action and civil disobedience, support for social movements' struggles, advocating forms of resistance which maximise respect for life and oppressed peoples' rights, as well as the construction of local alternatives to global capitalism.
5. An organisational philosophy based on decentralisation and autonomy.**[12]**

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[10] See **http://www.apg.org**

[11] Sophie, ChiapasLink UK, 'We are everywhere! People's Global Action meeting in Cochabamba, Bolivia', posted to A-infos list, 8 December 2001, **http://www.ainfos.ca/01/dec/ainfos00120.html**.

[12] PGA hallmarks, available at: **http://www.nadir.org/nadir/initiativ/agp/free/pga/hallm.htm**.

These hallmarks function to structure participation in the PGA process. In theory, they allow the network to remain 'open' while designating the kinds of activities that don't fall within its field. PGA meetings, for example, do not exclude those who don't subscribe to ITS hallmarks, but neither would discussions explicitly contrary to them be given much attention. Certain kinds of discussion are openly privileged over others on pragmatic grounds.

Structures like PGA and those being experimented with more widely are part of the social movement's general rejection of organisational models based on representation, verticality and hierarchy. In their stead comes 'non-hierarchical decentralisation' and 'horizontal coordination'. "From this movement", writes Massimo De Angelis, "emerges [...] the concept and practice of network horizontality, democracy, of the exercise of power from below".**[13]** For this "radical political economist", this form of "social cooperation" is "ours". It is 'our' horizontality and these are 'our' networks, part of a set of modes of coordination of human activity that "goes beyond the capitalist market and beyond the state. [...] we are talking about another world. [...] the slogan on T-shirts in Genoa was entirely correct: another world is not only possible. Rather, we are already patiently and with effort building another world – with all its contradictions, limitations and ambiguities – through the form of our networks".**[14]**

In other words, it is the open, networked, horizontal form of the movement that produces its radical potential for social change: the message, yet again, is the medium. In the case of the self-described 'open publishing' project Indymedia, for example, the open submission structure is said to collapse the distinction between media producer and consumer, allowing us to "become the media". The Indymedia newswire, write the collective, "works on the principle of open publishing, an essential element of the Indymedia project that allows anyone to instantaneously self-publish their work on a globally accessible web site. The Indymedia newswire encourages people to become the media [...] While Indymedia reserves the right to develop sections of the site that provide edited articles, there is no designated Indymedia editorial collective that edits articles posted to the **http://www.Indymedia.org** news wire".**[15]**

Here, the idea of openness presents itself as absolutely inimical to the "dominant multinational global news system," where "news is not free, news is not open". With open publishing:

[13] Massimo De Angelis, 'From Movement to Society', in *The Commoner*, August 2001, **http://www.commoner.org.uk/01-3groundzero.htm**.

[14] De Angelis, ibid.

[15] Indymedia collective statement

> the process of creating news is transparent to the readers. They can contribute a story and see it instantly appear in the pool of stories publicly available. Those stories are filtered as little as possible to help the readers find the stories they want. Readers can see editorial decisions being made by others. They can see how to get involved and help make editorial decisions. If they can think of a better way for the software to help shape editorial decisions, they can copy the software because it is free and change it and start their own site. If they want to redistribute the news, they can, preferably on an open publishing site. The working parts of journalism are exposed. Open publishing assumes the reader is smart and creative and might want to be a writer and an editor and a distributor and even a software programmer [...] Open publishing is free software. It's freedom of information, freedom for creativity.**[16]**

Accounts such as this and De Angelis' bear out my argument that an extreme level of expectation is being focused on openness as an agent for change. Not only is openness central to the organisation of the social movement, but in many cases it is taken as read that the organisational quality of openness is inherently radical and will be productive of positive change in whichever part of the social-political field it is deployed. This is seen, for example, in the work of the group Open Organisations, comprised of three individuals – Toni Prug, Richard Malter and Benjamin Geer – who were previously closely involved with UK Indymedia, and who have until relatively recently been united in their belief in the radically liberatory potentials of openness. For them, it is simply an as-yet insufficiently theorised and elaborated form and thus they have been working on what might be characterised as a 'strong' or 'robust' openness model which recommends a set of working processes or practices intended to foster it. 'Open organisations' are entities that "anyone can join, [that function with] complete transparency and flexible and fair decision-making structures, ownership patterns and exchange mechanisms, that are designed, defined and refined, by members as part of a continual transformative and learning process".**[17]**

3. Crypto-hierarchies And Problems With Openness

In effect, by creating 'structured processes', open organisations try to provide

[16] Matthew Arnison, 'Open Publishing is the Same as Free Software', March 2001, available at **http://www.cat.org.au/maffew/cat/openpub.html**.

[17] Statement taken from **http://wiki.uniteddiversity.com/open_organisations**.

for a consistent openness. In doing so, they implicitly recognise that there are inconsistencies between the rhetoric and behaviour of contemporary political organisations. But what are these problems and what, indeed where, are openness' discontents? In fact they may be found everywhere. In the case of Indymedia's 'open publishing' project, for example, openness has been failing under the pressures of scale. Initially small 'cottage-industry' IMCs were able to manage the open-publishing process very well. But in many IMCs, when the number of site visitors has risen past a certain level, problems have started to occur. Popular IMC sites have become targets for interventions by political opponents, often from the fascist right, seeking opportunities to disrupt what they regard as an IMC's 'countercultural' potential and a platform from which to spread their own rhetoric. Of course there is nothing to prevent this in the IMC manifesto; but it has impelled the understandable decision to edit out fascist viewpoints and other 'noise', using the ad-hoc teams whose function was previously to develop and maintain the IMC's open-publishing system. Some IMCs have ultimately been seen to take on a rather traditional, closed and censorial function that is all too often undeclared and in contradiction with the official IMC "become the media" line. In other words, Indymedia channels are often politically censored by a small group of more-or-less anonymous individuals to quite a high degree.

This emergence of soft control within organisations emphatically declared open is becoming a common and tacitly acknowledged problem across the social movement. As with Indymedia, practical issues with open development and organisation too often give the lie to the enthusiastic promotion of openness as an effective alternative to representation. After one PGA meeting, the group Sans Titre had this to say: "Whenever we have been involved in PGA-inspired action, we have been unable to identify decision-making bodies. Moreover, there has been no collective assessment of the effectiveness of PGA-inspired actions [...] If the PGA-process includes decision-making and assessment bodies, where are they to be found? How can we take part?"**[18]**

This problem runs through the temporary constitutions and dissolutions of 'open' organisations that make up the social movement. The avowed 'absence' of decision-making bodies and points of centralisation can too easily segue into a concealment of control per se. In fact, in both the FLOSS model and the social movement, the idea that no one group or person controls development and decision making is often quite far

[18] Sans Titre, 'Open Letter to the People's Global Action', 5 September 2002, **http://www.pgaconference.org/_postconference_/pp_sanstitre.htm**.

from the truth. In both cases it is formally true that anyone may alter or intervene in processes according to their needs, views or projects; but practically speaking, few people can assume the necessary social position from which to make effective 'interventions'. Open source software is generally tightly controlled by a small group of people: the Apache Group, for example, very open-handedly controls the development of the Apache Web server, and Linus Torvalds has the final say on the Linux kernel's development.**[19]** Likewise, in the social movement, decision-making often devolves to a surprisingly small number of individuals and groups who make a lot of the running in deciding what happens, where and when. Though they never officially 'speak for' others, much unofficial doctrine nonetheless emanates from them. Within political networks, such groups and individuals can be seen as 'supernodes', not only routing more than their 'fair share' of traffic, but actively determining the 'content' that traverses them. Such supernodes do not (necessarily) constitute themselves out of a malicious will-to-power: rather, power defaults to them through personal qualities like energy, commitment and charisma, and the ability to synthesise politically important social moments into identifiable ideas and forms.

This soft control by crypto-hierarchies is tacit knowledge for many who have had first-hand experience with 'open' organisations. Statements such as the following by a political activist introduced to what he calls 'the chaos of open community' at a Washington State forest blockade camp in 1994 and then later the Carters Road Community, are typical: "the core group, by virtue of being around longer as individuals, and also working together longest as a sub group, formed unintentional elites. These elite groups were covert structures in open consensus-based communities which said loudly and clearly that everyone's influence and power was equal [...] We all joined in with a vigorous explanation that [...] there were no leaders [...] The conspiracy to hide this fact among ourselves and from ourselves was remarkably successful. It was as though the situation where no leaders existed was known, deep down by everyone, to be impossible, outsiders were able to say so, but communards were hoping so much that it was not true that they were able to pretend..."**[20]**

To examine how much this 'pretence' is the rule within the social movement is beyond the scope of this piece. But what is clear is that each of the five

[19] See, for example, Paula Roone, 'Is Linus Killing Linux'? in *TechWeb*, 28 January 2001, **http://www.techweb.com/wire/story/TWB20010126S0013**.

[20] Chris Lee, 'An Article Concerning the Issue of Covert Power Elites in Open Communities', 4 December 2001, **http://cartersrd.org.au/covert_elites.html**.

characteristics of 'openness' described above, when subjected to scrutiny, reveal themselves as extremely compromised. The details, for example, of meetings and discussions are published and circulated, but this information is primarily received by those who are able (and often privileged to be able) to connect to certain (technological/social) networks. Likewise, the language of a 'call' or equivalent can determine whether a party will feel comfortable or suitable to respond to it: like PGA's 'hallmarks', language and phraseology is a point of 'soft control', but not one that is openly discussed and studied. Furthermore, meetings may be 'open to all', but they can quickly become hostile environments for parties who do not or cannot observe the 'basic' consensus that is often tacitly agreed between long-term actors in a particular scene. This peer consensus can indeed, on occasion, so determine the movement's 'open' decision-making process as to turn it into a war of attrition on difference, with divergent points of view gradually giving themselves up to peer opinion as the 'debate' wears on and on. The 'block' or 'veto' is in fact rarely used because of the peer pressure placed on those who would use it ("Aw, come on, you're not going to block, are you?" – a common enough plaint at movement meetings). In some cases the apparently neutral 'moderator' role can also become bizarrely instrumentalised, giving rise to the sensation that 'something has already been decided', and that the meeting is just for performative purposes.

Likewise, documentation of meetings and decisions usually only tells half the story. Points of serious contention are frequently left out on grounds that the parties involved in the disagreement might not want them to be published. This 'smoothing over' of serious difference is quite normal. In fact participants in IRC discussions habitually inflect what they say because of the future publication of the logs, using private channels to discuss key points and only holding 'official' discussions and 'lines' in the open. Too often the open channel only 'hears' what it is supposed to hear and important exchanges are not published.

All of this explains why some activist-theorists are beginning to interrogate the experiment with openness as it is taking shape in the social movement. History has put significant resources at their disposal. Jo Freeman's 'The Tyranny of Structurelessness' is a key document, originating from the experiences of the 60s women's liberation movement, and provides a critique of the laissez faire ideal for group structures still absolutely relevant today. As Freeman argues, such structures can become "a smoke screen for the strong or the lucky to establish unquestioned hegemony over others. Thus, structurelessness becomes a way of

masking power. As long as the structure of the group is informal, the rules of how decisions are made are known only to a few, and awareness of power is limited to those who know the rules".**[21]**

Freeman's insight is fundamental: the idea of openness does not in itself prevent the formation of the informal structures that I have described here as crypto-hierarchies; on the contrary, it is possible that it fosters them to a greater degree than structured organisations. Underneath its rhetoric of openness, the non-hierarchical organisation can thus take on the qualities of a 'gang'. As Jacques Camatte and Gianna Collu realised in 1969, such organisations tend to hide the existence of their informal ruling cliques to appear more attractive to outsiders, feeding on the creative abilities of individual members whilst suppressing their individual contributions, and producing layers of authority contingent on individuals' intellectual or social dominance. "Even in those groups that want to escape [it]", writes Camatte, "the [...] gang mechanism nevertheless tends to prevail[...] The inability to question theoretical questions independently leads the individual to take refuge behind the authority of another member who becomes, objectively, a leader, or behind the group entity, which becomes a gang".**[22]**

Openness: Open To All Constituencies

What this initial investigation has indicated is that the idea of openness, which is receiving such a promotion on the heels of the free-libre and open source software movement, is not in and of itself an immediately sufficient alternative to the bankrupt structures of representation. There seem to be good reasons for the discontent with open organisation felt by many activists, much of it based on evidence that must remain, by nature, anecdotal. But what is clear is that, if we are going to promote open organisation within the social movement, we must also take care to scrutinise the tacit flows of power that underlie and undercut it. The accounts here suggest that once the formal hierarchical membrane of group organisation is dismantled – in which, for example, software composition or political decision-making might have previously taken place – what remains are tacit control structures. In FLOSS, limitations to those who can access and alter source code are formally removed. But what then comes to define such access, and the software that is produced, are underlying determinants such as education, social

[21] Jo Freeman, 'The Tyranny of Structurelessness', first printed by the Women's Liberation Movement, USA, 1970 **http://www.anarres.org.au/essays/amtos.htm**.

[22] Jacques Camatte, 'On Organisation', in *Invariance*, Annee V, Serie II, No.2, reprinted in *This World We Must Leave and Other Essays,* Autonomedia, New York, 1995, p 30.

> opportunity, social connections and affiliations. The most open system theoretically imaginable, this is to say, reveals perfectly the predicating inequities of the wider environment in which it is situated; what the idea of openness must tackle first and most critically is that a really open organisation cannot be realised without a prior radicalisation of the social-political field in which it operates. And that, of course, is to beg the oldest of questions.

Source: http://www.metamute.org/en/The-Packet-Gang

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● Author : Matteo Pasquinelli

● Radical Machines Against the Techno-Empire: from Utopia to Network

Source:
http://journal.hyperdrome.net/issues/issue1/pasquinelli.html
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> Everyone of us is a machine of the real, everyone of us is a constructive machine. - Toni Negri
>
> Technical machines only work if they are not out of order. Desiring machines on the contrary continually break down as they run, and in fact run only when they are not functioning properly. Art often takes advantage of this property by creating veritable group fantasies in which desiring production is used to short-circuit social production, and to interfere with the reproductive function of technical machines by introducing an element of dysfunction. - Gilles Deleuze, Felix Guattari, *L'anti-Oedipe*

What is knowledge sharing? How does the knowledge economy function? Where is the general intellect at work? Take the cigarettes machine. The machine you see is the embodying of a scientific knowledge into hardware and software components, generations of engineering stratified for commercial use: it automatically manages fluxes of money and commodities, substitutes a human with a user-friendly interface, defends private property, functions on the basis of a minimal control and restocking routine. Where has the tobacconist gone? Sometimes he enjoys free time. Other times the company that owns the chain of distribution has replaced him. In his place one often meets the technician. Far from emulating Marx's "Fragment on Machines" with a 'Fragment' on cigarette machines, this unhealthy example is meant to show how post-fordist theories live around us and that material or abstract machines built by collective intelligence are organically chained to the fluxes of the economy and of our needs.

Rather than of general intellect we should talk of general intellects. There are multiple forms of collective intelligence. Some can become totalitarian systems, such as the military-managerial ideology of the neocons or of Microsoft empire. Others can be embodied in social democratic bureaucracies, in the apparatus of police control, in the maths of stock market speculators, in the architecture of our cities (every day we walk on concretions of collective intelligence). In the dystopias of *2001: A Space Odyssey* and *The Matrix*, the brain of machines evolves into self-consciousness to the point of getting rid of the human. 'Good' collective

intelligences, on the other hand, produce international networks of cooperation such as the network of the global movement, of precarious workers, of free software developers, of media activism. They also produce the sharing of knowledge in universities, the Creative Commons open licenses and participative urban planning, narrations and imaginaries of liberation.

From a geopolitical perspective we could figure ourselves in one of Philip Dick's sci-fi paranoias: Earth is dominated by one Intelligence, but inside of it a war unfolds between two Organisations of the general intellect, opposed yet intertwined.

Used to the traditional representative forms of the global movement we fail to grasp the new productive conflicts. Concerned as we are about the imperial war, we do not appreciate the centrality of this struggle. Following Manuel Castells, we define the movement as a resistance identity that fails to become a project identity. We are not aware of the distance between the global movement and the centre of capitalist production. Paraphrasing Paolo Virno, we say that there already is too much politics in new forms of production for the politics of the movement to still enjoy any autonomous dignity.**[1]**

The events of 1977 (not only in Italy but also in the punk season) sanctioned the end of the 'revolutionary' paradigm and the beginning of that of movement, opening new spaces of conflict in the fields of communication, media and the production of the imagery. These days we are discovering that the 'movement' as a format needs to be overcome, in favour of that of network.

Three kinds of action, well separated in the 19th century – labour politics and art – are now integrated into one attitude and central to each productive process. In order to work, to do politics or to produce the imaginary today one needs hybrid competences. This means that we all are workers-artists-activists, but it also means that the figures of the militant and the artist are surpassed and that such competences are only formed in a common space that is the sphere of the collective intellect.

Since Marx's *Grundrisse*, the general intellect is the patriarch of a family of concepts that are more numerous and cover a wide range of issues: knowledge-based economy, information society, cognitive capitalism, immaterial labour, collective intelligence, creative class, cognitariat, knowledge sharing and post-fordism. In the last few years the political lexicon has got rich with interlaced critical tools that we turn over in our hands wondering about their exact usefulness. For the sake of

[1] Paolo Virno, *A Grammar of the Multitude*, Semiotext(e), New York, 2003. Original Italian edition, *Grammatica della moltitudine*, Derive Approdi, Rome 2002.

simplicity, we only accounted for the terms that inherited an Enlightenment, speculative, angelic and almost neognostic approach. But reality is much more complex and we wait for new forms to claim for themselves the role that within the same field is due to desire, body, aesthetics, biopolitics. We also remember the quarrel of cognitive vs. Precarious workers, two faces of the same medal that the precogs of Chainworkers.org describe in this way: "cognitive workers are networkers, precarious workers are networked, the former are brainworkers, the latter chainworkers: the former first seduced and then abandoned by companies and financial markets, the latter dragged into and made flexible by the fluxes of global capital".**[2]**

The point is that we are searching for a new collective agent and a new point of application for the rusted revolutionary lever. The success of the concept of multitude also reflects the current disorientation. Critical thought continuously seeks to forge the collective actor that can embody the zeitgeist and we can go back to history reconstructing the underlying forms of each paradigm of political action: the more or less collective social agent, the more or less vertical organisation, the more or less utopian goal. Proletariat and multitude, party and movement, revolution and self-organisation.

In the current imaginary the general intellect (or whatever you want to call it) seems to be the collective agent, its form being the network, its goal creating a plane of self-organisation, its field of action being biopolitical spectacular cognitive capitalism.

We are not talking about multitude here, because it is a concept at once too noble and inflated, heir of centuries of philosophy and too often called for by marching megaphones. The concept of multitude has been more useful to exorcise the identitary pretences of the global movement, than as a constructive tool. The pars construens will be a task for the general intellect: philosophers such as Paolo Virno, when they have to find a common ground, the lost collective agent, reconstruct the Collective Intelligence and Cooperation as emerging and constitutive properties of the multitude.

In a different paranoid fable, we imagine that technology is the last heir of a series of collective agents generated by history as in a matryoshka doll: religion - theology - philosophy - ideology - science - technology. This is to say that in information and intelligence technologies the history of thought is stratified, even though we only remember the last episode of

[2] 'Chainworkers, Il precognitariato. L'europrecariato si è sollevato, 2003', published on **http://www.rekombinant.org/article.php?sid=2184**. See also **http://www.chainworkers.org** and **http://www.inventati.org/mailman/listinfo/precog**.

this series, i.e. the network that embodies the dreams of the previous political generation.

How did we come to all this? We are at the point of convergence between different historical planes: the inheritance of historical vanguards in the synthesis of aesthetics and politics; the struggles of '68 and '77 that open up new spaces for conflict outside of the factories and inside the imaginary and communication; the hypertrophy of the society of the spectacle and the economy of the logo; the transformation of fordist wage labour into post-fordist autonomous precarious labour; the information revolution and the emergence of the internet, the net economy and the network society; utopia turned into technology. The highest exercise of representation that becomes molecular production.

Some perceive the current moment as a lively world network, some as an indistinct cloud, some as a new form of exploitation, some as an opportunity. Today the density reaches its critical mass and forms a global radical class on the intersection of the planes of activism, communication, arts, network technologies and independent research. What does it mean, to be productive and projective, to abandon mere representation of conflict and the representative forms of politics?

There is a hegemonic metaphor in political debate, in the arts world, in philosophy, in media criticism, in network culture: that is free software. We hear it quoted at the end of each intervention that poses the problem of what is to be done (but also in articles of strategic marketing), whilst the twin metaphor of open source contaminates every discipline: open source architecture, open source literature, open source democracy, open source city . . .

Softwares are immaterial machines. The metaphor of free software is so simple for its immateriality that it often fails to clash with the real world. Even if we know that it is a good and right thing, we ask polemically: what will change when all the computers in the world will run free software? The most interesting aspect of the free software model is the immense cooperative network that was created by programmers on a global scale, but which other concrete examples can we refer to in proposing new forms of action in the real world and not only in the digital realm?

In the 70s Deleuze and Guattari had the intuition of the machinic, an introjection/imitation of the industrial form of production. Finally a hydraulic materialism was talking about desiring, revolutionary, celibate, war machines rather than representative or ideological ones.**[3]**

Deleuze and Guattari took the machine out of the factory, now it is up to us to take it out of the network and imagine a post-internet generation.

[3] Gilles Deleuze and Felix Guattari, *L'anti-Oedipe,* Les Éditions De Minuit, Paris, 1972.

Cognitive labour produces machines of all kinds, not only software: electronic machines, narrative machines, advertising machines, mediatic machines, acting machines, psychic machines, social machines, libidinous machines. In the 19th century the definition of machine referred to a device transforming energy. In the 20th century Turing's machine – the foundation of all computing – starts interpreting information in the form of sequences of 0 and 1. For Deleuze and Guattari on the other hand a desiring machine produces, cuts and composes fluxes and without rest it produces the real.

Today we intend by machine the elementary form of the general intellect, each node of the network of collective intelligence, each material or immaterial dispositif that organically interlinks the fluxes of the economy and our desires.

At a higher level, the network can itself be regarded as a mega-machine of assemblage of other machines, and even the multitude becomes machinic, as Negri and Hardt write in *Empire*: "The multitude not only uses machines to produce, but also becomes increasingly machinic itself, as the means of production are increasingly integrated into the minds and bodies of the multitude. In this context re-appropriation means having free access to and control over knowledge, information, communication, and affects because these are some of the primary means of biopolitical production. Just because these productive machines have been integrated into the multitude does not mean that the multitude has control over them. Rather, it makes more vicious and injurious their alienation. The right to re-appropriation is really the multitude's right to self-control and autonomous self-production".**[4]**

In other words in post-fordism the factory has come out of the factory and the whole of society has become a factory. An already machinic multitude suggests that the actual subversion of the productive system into an autonomous plane could be possible in a flash, by disconnecting the multitude from capital command. But the operation is not that easy in the traditional terms of "re-appropriation of the means of production". Why?

Whilst it is true that today the main means of labour is the brain and that workers can immediately re-appropriate the means of production, it is also true that control and exploitation in society have become immaterial, cognitive, networked. Not only the general intellect of the multitudes has grown, but also the general intellect of the empire. The workers, armed with their computers, can re-appropriate the means of

[4] Michael Hardt and Antonio Negri, *Empire,* Harvard University Press, Cambridge, MA, 2000.

production, but as soon as they stick their nose out of their desktop they have to face a Godzilla that they had not predicted, the Godzilla of the enemy's general intellect.

Social, state and economic meta-machines – to which human beings are connected like appendixes – are dominated by conscious and subconscious automatisms. Meta-machines are ruled by a particular kind of cognitive labour which is the administrative political managerial labour, that runs projects, organises, controls on a vast scale: a form of general intellect that we have never considered, whose prince is a figure that appears on the scene in the second half of the 20th century: the manager.

As Bifo tells us, recalling Orwell, in our post-democratic world (or, if you prefer, in empire) managers have seized command: "Capitalism is disappearing, but Socialism is not replacing it. What is now arising is a new kind of planned, centralised society which will be neither capitalist nor, in any accepted sense of the word, democratic. The rulers of this new society will be the people who effectively control the means of production: that is, business executives, technicians, bureaucrats and soldiers, lumped together by Burnham under the name of managers. These people will eliminate the old capitalist class, crush the working class, and so organise society that all power and economic privilege remain in their own hands. Private property rights will be abolished, but common ownership will not be established. The new managerial societies will not consist of a patchwork of small, independent states, but of great super-states grouped round the main industrial centres in Europe, Asia and America. Internally, each society will be hierarchical, with an aristocracy of talent at the top and a mass of semi-slaves at the bottom".**[5]**

At the beginning we mentioned two intelligences that face one another in the world, and the forms in which they manifest themselves. The multitude functions as a machine because it is inside a scheme, a social software, thought for the exploitation of its energies and its ideas. Then, the techno-managers (public private or military) are those who, whether consciously or not, plan and control machines made up of human beings assembled with one another. The dream of general intellect brings forth monsters.

Compared with the pervasive neoliberal techno-management, the intelligence of the global movement is of little importance. What's to be done? We

[5] George Orwell, *Second Thoughts on James Burnham*, 1946, quoted in Franco "Bifo" Berardi, *Il totalitarismo tecno-manageriale da Burnham a Bush*, 2004, published on **http://www.rekombinant.org/article.php?sid=2241**.

need to invent virtuous revolutionary radical machines to place them in the nodal points of the network, as well as facing the general intellect that administers the imperial meta-machines. Before starting this we need to be aware of the density of the “intelligence” that is condensed in each commodity, organization, message and media, in each machine of postmodern society.

Don’t hate the machine, be the machine. How can we turn the sharing of knowledge, tools and spaces into new radical revolutionary productive machines, beyond the inflated free software? This is the challenge that once upon the time was called re-appropriation of the means of production.

Will the global radical class manage to invent social machines that can challenge capital and function as planes of autonomy and autopoiesis? Radical machines that are able to face the techno-managerial intelligence and imperial meta-machines lined up all around us? The match multitude vs empire becomes the match radical machines vs imperial techno-monsters. How do we start building these machines?

translated by Arianna Bove

Berlin - Bologna, February 2004

• Author : Critical Art Ensemble

• Utopian Plagiarism, Hypertextuality and Electronic Cultural Production

Chapter 5 from *The Electronic Disturbance* by Critical Art Ensemble (abridged)
Source: **http://www.critical-art.net/books/ted/ted5.pdf**

Plagiarism has long been considered an evil in the cultural world. Typically it has been viewed as the theft of language, ideas and images by the less than talented, often for the enhancement of personal fortune or prestige. Yet, like most mythologies, the myth of plagiarism is easily inverted. Perhaps it is those who support the legislation of representation and the privatization of language that are suspect; perhaps the plagiarist's actions, given a specific set of social conditions, are the ones contributing most to cultural enrichment. Prior to the Enlightenment, plagiarism was useful in aiding the distribution of ideas. An English poet could appropriate and translate a sonnet from Petrarch and call it his own. In accordance with the classical aesthetic of art as imitation, this was a perfectly acceptable practice. The real value of this activity rested less in the reinforcement of classical aesthetics than in the distribution of work to areas where otherwise it probably would not have appeared. The works of English plagiarists, such as Chaucer, Shakespeare, Spenser, Sterne, Coleridge and De Quincey, are still a vital part of the English heritage, and remain in the literary canon to this day.

At present, new conditions have emerged that once again make plagiarism an acceptable, even crucial strategy for textual production. This is the age of the recombinant: recombinant bodies, recombinant gender, recombinant texts, recombinant culture. Looking back through the privileged frame of hindsight, one can argue that the recombinant has always been key in the development of meaning and invention; recent extraordinary advances in electronic technology have called attention to the recombinant both in theory and in practice (for example, the use of morphing in video and film). The primary value of all electronic technology, especially computers and imaging systems, is the startling speed at which they can transmit information in both raw and refined forms. As information flows at a high velocity through the electronic networks, disparate and sometimes incommensurable systems of meaning intersect, with both enlightening and inventive consequences. In a society dominated by a 'knowledge' explosion, exploring the possibilities of meaning in that which already exists is more pressing than adding redundant information (even if it is produced using the methodology and metaphysic of the 'original'). In the past, arguments in favour of plagiarism were limited to showing its use in resisting the privatization of culture that serves the needs and desires of the power

elite. Today one can argue that plagiarism is acceptable, even inevitable, given the nature of postmodern existence with its techno-infrastructure. In a recombinant culture, plagiarism is productive, although we need not abandon the romantic model of cultural production which privileges a model of *ex nihilo* creation. Certainly in a general sense the latter model is somewhat anachronistic. There are still specific situations where such thinking is useful, and one can never be sure when it could become appropriate again. What is called for is an end to its tyranny and to its institutionalized cultural bigotry. This is a call to open the cultural data base, to let everyone use the technology of textual production to its maximum potential.

*Ideas improve. The meaning of words participates in the improvement. Plagiarism is necessary. Progress implies it. It embraces an author's phrase, makes use of his expressions, erases a false idea, and replaces it with the right idea.***[1]**

Plagiarism often carries a weight of negative connotations (particularly in the bureaucratic class); while the need for its use has increased over the century, plagiarism itself has been camouflaged in a new lexicon by those desiring to explore the practice as method and as a legitimized form of cultural discourse. Readymades, collage, found art or found text, intertexts, combines, detournment, and appropriation – all these terms represent explorations in plagiarism. Indeed, these terms are not

[1] In its more heroic form the footnote has a low-speed hypertextual function – that is, connecting the reader with other sources of information that can further articulate the producer's words. It points to additional information too lengthy to include in the text itself. This is not an objectionable function. The footnote is also a means of surveillance by which one can 'check up' on a writer, to be sure that s/he is not improperly using an idea or phrase from the work of another. This function makes the footnote problematic, although it may be appropriate as a means of verifying conclusions in a quantitative study, for example. The surveillance function of the footnote imposes fixed interpretations on a linguistic sequence, and implies ownership of language and ideas by the individual cited. The note becomes an homage to the genius who supposedly originated the idea. This would be acceptable if all who deserved credit got their due; however, such crediting is impossible, since it would begin an infinite regress. Consequently, that which is most feared occurs; the labour of many is stolen, smuggled in under the authority of the signature which is cited. In the case of those cited who are still living, this designation of authorial ownership allows them to collect rewards from the work of others. It must be realized that writing itself is theft: it is a changing of the features of the old culture-text in much the same way one disguises stolen goods. This is not to say that signatures should never be cited; but remember that the signature is merely a sign, a shorthand under which a collection of interrelated ideas may be stored and rapidly deployed.

perfectly synonymous, but they all intersect a set of meanings primary to the philosophy and activity of plagiarism. Philosophically, they all stand in opposition to essentialist doctrines of the text: they all assume that no structure within a given text provides a universal and necessary meaning. No work of art or philosophy exhausts itself in itself alone, in its being-in-itself. Such works have always stood in relation to the actual life-process of society from which they have distinguished themselves. Enlightenment essentialism failed to provide a unit of analysis that could act as a basis of meaning. Just as the connection between a signifier and its referent is arbitrary, the unit of meaning used for any given textual analysis is also arbitrary. Roland Barthes' notion of the lexia primarily indicates surrender in the search for a basic unit of meaning. Since language was the only tool available for the development of metalanguage, such a project was doomed from its inception. It was much like trying to eat soup with soup. The text itself is fluid – although the language game of ideology can provide the illusion of stability, creating blockage by manipulating the unacknowledged assumptions of everyday life. Consequently, one of the main goals of the plagiarist is to restore the dynamic and unstable drift of meaning, by appropriating and recombining fragments of culture. In this way, meanings can be produced that were not previously associated with an object or a given set of objects.

Marcel Duchamp, one of the first to understand the power of recombination, presented an early incarnation of this new aesthetic with his readymade series. Duchamp took objects to which he was 'visually indifferent,' and re-contextualized them in a manner that shifted their meaning. For example, by taking a urinal out of the rest room, signing it and placing it on a pedestal in an art gallery, meaning slid away from the apparently exhaustive functional interpretation of the object. Although this meaning did not completely disappear, it was placed in harsh juxtaposition to another possibility – meaning as an art object. This problem of instability increased when problems of origin were raised: the object was not made by an artist, but by a machine. Whether or not the viewer chose to accept other possibilities for interpreting the function of the artist and the authenticity of the art object, the urinal in a gallery instigated a moment of uncertainty and reassessment. This conceptual game has been replayed numerous times over the 20th century, at times for very narrow purposes, as with Rauschenberg's combines – done for the sake of attacking the critical hegemony of Clement Greenberg – while at other times it has been done to promote large-scale political and cultural restructuring, as in the case of Situationism.

In each case, the plagiarist works to open meaning through the injection of scepticism into the culture-text.

Here one also sees the failure of Romantic essentialism. Even the alleged transcendental object cannot escape the sceptics' critique. Duchamp's notion of the inverted readymade (turning a Rembrandt painting into an ironing board) suggested that the distinguished art object draws its power from a historical legitimation process firmly rooted in the institutions of western culture, and not from being an unalterable conduit to transcendental realms. This is not to deny the possibility of transcendental experience, but only to say that if it does exist, it is pre-linguistic, and thereby relegated to the privacy of an individual's subjectivity. A society with a complex division of labour requires a rationalisation of institutional processes, a situation which in turn robs Plagiarism has historically stood against the privileging of any text through spiritual, scientific or other legitimizing myths. The plagiarist sees all objects as equal and thereby horizontalizes the plane of phenomena. All texts become potentially usable and reusable. Herein lies an epistemology of anarchy, according to which the plagiarist argues that if science, religion or any other social institution precludes certainty beyond the realm of the private, then it is best to endow consciousness with as many categories of interpretation as possible. The tyranny of paradigms may have some useful consequences (such as greater efficiency within the paradigm), but the repressive costs to the individual (excluding other modes of thinking and reducing the possibility of invention) are too high. Rather than being led by sequences of signs, one should instead drift through them, choosing the interpretation best suited to the social conditions of a given situation.

It is a matter of throwing together various cut-up techniques in order to respond to the omnipresence of transmitters feeding us with their dead discourses (mass media, publicity, etc.). It is a question of unchaining the codes – not the subject any more – so that something will burst out, will escape; words beneath words, personal obsessions. Another kind of word is born which escapes from the totalitarianism of the media but retains their power, and turns it against their old masters.

Cultural production, literary or otherwise, has traditionally been a slow, labour-intensive process. In painting, sculpture or written work, the technology has always been primitive by contemporary standards. Paintbrushes, hammers and chisels, quills and paper, and even the printing press do not lend themselves well to rapid production and broad-range distribution. The time lapse between production and distribution can seem unbearably long. Book arts and traditional visual arts still suffer

tremendously from this problem, when compared to the electronic arts. Before electronic technology became dominant, cultural perspectives developed in a manner that more clearly defined texts as individual works. Cultural fragments appeared in their own right as discrete units, since their influence moved slowly enough to allow the orderly evolution of an argument or an aesthetic. Boundaries could be maintained between disciplines and schools of thoughts. Knowledge was considered finite, and was therefore easier to control. In the 19th century this traditional order began to collapse as new technology began to increase the velocity of cultural development. The first strong indicators began to appear that speed was becoming a crucial issue. Knowledge was shifting away from certitude, and transforming itself into information. During the American Civil War, Lincoln sat impatiently by his telegraph line, awaiting reports from his generals at the front. He had no patience with the long-winded rhetoric of the past, and demanded from his generals an efficient economy of language. There was no time for the traditional trappings of the elegant essayist. Cultural velocity and information have continued to increase at a geometric rate since then, resulting in an information panic. Production and distribution of information (or any other product) must be immediate; there can be no lag time between the two. Techno-culture has met this demand with data bases and electronic networks that rapidly move any type of information.

Under such conditions, plagiarism fulfils the requirements of economy of representation, without stifling invention. If invention occurs when a new perception or idea is brought out – by intersecting two or more formally disparate systems – then recombinant methodologies are desirable. This is where plagiarism progresses beyond nihilism. It does not simply inject scepticism to help destroy totalitarian systems that stop invention; it participates in invention, and is thereby also productive. The genius of an inventor like Leonardo da Vinci lay in his ability to recombine the then separate systems of biology, mathematics, engineering and art. He was not so much an originator as a synthesiser. There have been few people like him over the centuries, because the ability to hold that much data in one's own biological memory is rare. Now, however, the technology of recombination is available in the computer. The problem now for would-be cultural producers is to gain access to this technology and information. After all, access is the most precious of all privileges, and is therefore strictly guarded, which in turn makes one wonder whether to be a successful plagiarist, one must also be a successful hacker.

Most serious writers refuse to make themselves available to the things that technology is doing. I have never been able to understand this sort of fear. Many are afraid of using tape recorders, and the idea of using any electronic means for literary or artistic purposes seems to them some sort of sacrilege.

To some degree, a small portion of technology has fallen through the cracks into the hands of the lucky few. Personal computers and video cameras are the best examples. To accompany these consumer items and make their use more versatile, hypertextual and image sampling programs have also been developed – programs designed to facilitate recombination. It is the plagiarist's dream to be able to call up, move and recombine text with simple user-friendly commands. Perhaps plagiarism rightfully belongs to post-book culture, since only in that society can it be made explicit what book culture, with its geniuses and auteurs, tends to hide – that information is most useful when it interacts with other information, rather than when it is deified and presented in a vacuum.

[…]

The present requires us to rethink and re-present the notion of plagiarism. Its function has for too long been devalued by an ideology with little place in techno-culture. Let the romantic notions of originality, genius, and authorship remain, but as elements for cultural production without special privilege above other equally useful elements. It is time to openly and boldly use the methodology of recombination so as to better parallel the technology of our time.

• Author : Jon Ippolito

• Why Art Should Be Free

Source: **http://www.nothing.org/osc/WhyArtShouldBeFree.htm**

The text is presented here in abbreviated form: only its final sections. (The full text is available at the site above.) Most of the essay is concerned with the way in which the current economy of art production benefits the artist last and least. We take up the argument as Ippolito considers the value of Creative Commons licences – which might be seen to favour the artist more than current copyright legislation, but as Ippolito proposes, could beneficially be replaced by a far more radical arrangement.

"Where there is no gift there is no art". Lewis Hyde
[…]

Weaknesses of the License Approach

Voluntary licensing doesn't require any changes in intellectual property law; this is both its strength and its weakness. As the name 'Creative Commons' suggests, open licenses have the potential to demarcate a public space immune from the restrictions of intellectual and physical property – in the same sense that a public park like the Boston Commons is a communal territory available to all citizens equally. But the rest of the digital world is already functionally a commons anyway – it's just not legally one. Software piracy is rampant; Napster and its variants permit unlimited music sharing; and Web designers routinely pilfer code from other online sites whether it's copylefted or not.

That leaves an enforceability dilemma for legislators. They could choose not to put any muscle behind enforcing their own laws protecting intellectual property, in which case those laws will only hurt law-abiding citizens. Or they could choose to enforce them by the only means possible: drastically curtailing the freedoms netizens currently enjoy in order to prevent unauthorized use of digital culture. Senator Hollings has already proposed such legislation: the Consumer Broadband and Digital Television Promotion Act. This act would mandate copyright-sniffing chips in every PC and make circumventing them illegal – effectively forbidding the sale of fully programmable personal computers and eliminating any hope of innovative approaches to recording, playing, catalogueing, and distributing music or movies. To disable the internet to save EMI and Disney is the moral equivalent of burning down the library of Alexandria to ensure the livelihood of monastic scribes. Unfortunately, these legislators don't know enough

about the Internet to understand why Webarchivist and Google deserve more protection than Britney Spears and The Little Mermaid. It won't do artists any good to copyleft their movies if personal computers can only play videos produced by Hollywood studios.

The mutability of digital media creates another liability with voluntary licenses. Suppose digital artist Geoff Kuhntz scans a copyrighted postcard of seven puppies on a cushion, then uses Photoshop to replace all but one with a flowery background. Suppose Kuhntz then offers his image free of restrictions on a clearinghouse for open culture like Creativecommons.org. He's free to do that, because his 'transformative use' of the original image qualifies for fair use protection against a copyright suit. Another artist downloads it, agreeing to abide by the terms of the license. She decides it would look better if there were seven puppies instead of one, so she clones them – and wham, gets hit with a copyright infringement suit by the original artist. You can imagine the same scenario taking place in other media – for example, if an excerpted Philip Glass riff were re-sampled into a minimalist composition that rivalled the original, or if a work of online art that depended on random combinations of image and text from other pages accidentally re-created something dangerously close to one of its victims' Web pages. For digital culture, fair use is a porous category, which makes open licenses no guarantee you won't be sued.

As Creative Commons consultant Wendy Seltzer has observed, these practical obstacles don't necessarily mean the open license approach is wrong, just that it's incomplete. Modest readjustments are not an adequate solution to a legal framework that is out of touch with digital reality. To complement open licenses, we need not a legal or illegal intervention, but a meta-legal one.

The Digital Sanctuary

The solution I'd suggest to the digital liability of open licenses is as practical as it is radical: a 'digital sanctuary'. Digital objects are like rabbits – they reproduce easily. It is this promiscuity that creates practical problems for the commons approach. Let's say you take your pet rabbit for a walk in a public commons. If it gives birth, the offspring are still your property, and you can prosecute anyone who takes them from you. But if your promiscuous bunny's offspring happen to hop their way into a wildlife sanctuary, they could go from property to heritage - at which point your exclusive claim on them could vanish.

The internet could serve as such a sanctuary**[1]** for digital creativity, if our legal

[1] The digital sanctuary I propose, of course, is not defined by spatial boundaries. In that

system were to treat any snippet of culture that found its way online as communal heritage. The effect of this rule would be that any form of streamable[2] creativity, be it a text file, JPEG, or MP3, is automatically copylefted. Streamable versions of fixed formats – such as the MP3 of a live concert or Quicktime bootleg of a movie playing in theatres – would be similarly protected, whether they were streamed by the fixed-format's rights holder or by an unauthorized fan.

While this proposal would radically change the judicial understanding of the internet's role in stimulating innovation, it wouldn't change the actual everyday use of the internet very much at all. Although you'd never know it by listening to Hilary Rosen and Jack Valenti, most citizens treat the internet as a sanctuary already, surfing clear of online content that costs money.

In a global network, of course, enforcing open access – what Stanford cyberlaw guru Lawrence Lessig has called 'copyduty' – may be as difficult as enforcing closed access. To this problem I propose a compromise. Hollywood, the record labels, and anyone else who wants to restrict access to culture can try out innovative copy-protection schemes online, and hope that Jon Johansen doesn't crack them – or more importantly that his doing so doesn't cut into their profit margins. This 'post at your own risk' policy would mean that the circumvention of locked culture would be legal, but not guaranteed. A pet owner may choose to walk her bunny through the sanctuary with a leash – but if that bunny wriggles and hops away, the owner has no legal recourse to getting it back. Should the bunny emerge from the sanctuary and re-enter normal space, the owner can again assert property rights – and the same would be true of digital culture. Under this system, netizens could post endless remixes of *The Phantom Menace* online with impunity, but once they tried to distribute them in movie theatres, George Lucas could sue them for infringement.

The digital sanctuary is not a wilderness, but a wildlife refuge – not beyond the law, but protected by it. Legal paradigms like the protection of privacy and the prohibition on dangerous speech, which protect the public rather than rights holders, may still apply. We stamp out forest fires

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sense, the digital sanctuary is akin to an endangered species list, since the animals it protects are defined by a predetermined criterion rather than a predefined location or species. In terms of the criterion for protection, however, the digital sanctuary is the opposite of an endangered list: it protects not that which is most rare, but that which is most accessible.

[2] I'm using the word 'streamable' in the generic sense of anything that can conveniently be rendered in TCP/IP and circulated online.

when they threaten parks; maybe we should also stamp out computer viruses that threaten the network. It's not entirely clear how to enforce these protections, but it is important to note that the copy-protection schemes proposed by Hollings aren't the way.

Of course, the media conglomerates and their content providers can continue to make money off of the things that can't be streamed: immersive projections in big theaters, live concerts, leather-bound books you can read at the beach. Painters and sculptors would still have a choice of open or closed licenses for the products of their labour – they just couldn't enforce copyright over online digital reproductions of their work. For their part, internet artists determined to make a buck could put digital leashes on their web sites and hope for the best.**[3]** Or they could be grateful for what they have: a refuge from property, poor in cash but rich in gifts.

[3] Of course, the half-life of exclusive online art has historically been short: cf. Vuk Cosic's *Documenta Done* or 0100101110101101.ORG's remake of Hell.com.

• Author : Felix Stalder

• On the Difference between Open Source and Open Culture [1]

How would culture be created if artists were not locked into romantic notions of individual authorship and the associated drive to control the results of their labour was not enforced through ever expanding copyrights? What if cultural production was organized via principles of free access, collaborative creation and open adaptability of works? As such, the practices of a collective and transformative culture are not entirely new. They were characteristic for (oral) folk cultures prior to their transformation into mass culture by the respective industries during the twentieth century, and as counter-currents – the numerous avant-garde movements (dada, situationism, mail art, neoism, plagiarism, plunderphonics, etc.) which re-invented, radicalized and technologically up-graded various aspects of those. Yet, over the last decade, these issues – of open and collaborative practices – have taken on an entirely new sense of urgency. Generally, the ease with which digital information can be globally distributed and manipulated by a very large number of people makes free distribution and free adaptation technically possible and a matter of everyday practice. Everyone with a computer already uses, in one way or the other, the copy & paste function built into all editors. This is what computers are about: copying, manipulating and storing information. With access to the internet, people are able to sample a wide range of sources and make their own works available to potentially large audiences.

More specifically, the free, and open source software (FOSS) movement has shown that it is possible to create advanced informational goods based on just these principles. They are enshrined as four freedoms in the General Public License (GPL), the legal and normative basis of much of this movement. These are, it is worth repeating: freedom to use a work for any purpose, freedom to change it, freedom to distribute exact copies of it, and freedom to distribute transformed copies. These freedoms are made practicable through the obligation to provide the necessary resources; for software, this is the human-readable source code (rather than just the machine-readable binaries, consisting of nothing that ones and zeros). After close to two decades of FOSS development it has become clear that it embodies a new mode of production, that is, a new type of social organization underpinning the creation of a class of goods. To stress that this mode of production does not need to be limited to FOSS, Yochai Benkler has called it 'commons-based peer production'[2] meaning that the resources for

[1] Thanks to Armin Medosch for comments on a draft version.

[2] Yochai Benkler, 'Coase's Penguin, or, Linux and The Nature of the Firm', *Yale Law Journal,* No. 112, 2002, **http://www.benkler.com**.

production e.g. the source code are not privately owned and traded in markets, but managed as a commons, open to all members of a community made up of volunteers (those who accept the conditions of the GPL).

It is perhaps not surprising that such a 'really existing utopia' has had a strong attraction for cultural producers whose lives are made difficult by having to conform either to the demands of the culture/creative industries, or the traditional art markets. Thus over the last couple of years, we have seen an explosion of self-declared 'openness' in virtually all fields of cultural production, trying, in one way or the other, to emulate the FOSS style of production, usually understood as egalitarian and collaborative production.

However, despite all the excitement, the results have been, well, rather meagre. There are plenty of collaborative platforms, waiting to be used. Those that are used often produce material so idiosyncratic that they are of relevance only to the communities creating them, barely reaching beyond self-contained islands, always at the brink of collapsing into de facto closed clubs of the like-minded. There is only one example that springs to mind of something that has reached the size and impact comparable to major FOSS projects: Wikipedia, the free online encyclopedia.

The exceptional status of Wikipedia suggests that the FOSS model is not easily transferable to other domains of cultural production.**[3]** Rather, it seems to suggest that there are conditions which are specific to software development. For example, most software development is highly modular, meaning many people can work in parallel on self-contained aspects with little coordination between them. All that is necessary is to agree on certain standards (to make sure the various modules are compatible) and a loosely-defined direction for the development. This gives the individual contributors a high degree of autonomy, without diluting the overall quality of the emergent result. This, of course, does not apply to literary texts, films, or music, where the demands for overall coherence are very different. It's not surprising, then, that we still have not seen, and I would suspect will never see, an open source novel.**[4]** Another important aspect in which software development differs from most cultural production is its economic

[3] Unless technically restricted, informational goods are perfectly copyable and distributable for free. This makes them sufficiently distinct from material goods to constitute an ontologically different class of objects, even if the transfer between the two, say printing a digital text on paper, is often not difficult.

[4] Even for non-fiction books, this has not worked out so far, with the possible exception of educational text books, a genre characterized by the most unimaginative writing.

structure. Around three quarters of professional programmers (meaning people who are paid to write code) work for companies that use software but do not sell it.[5] Commodity software (à la Microsoft) has always been only a small aspect of all software that is produced and the overall sector has always been oriented towards providing services. Hence, it's easy to imagine an industry providing an economic basis for long-term FOSS development. And such an industry is emerging rapidly. Of course, artists, for very good reasons, are reluctant to accept a service model forced upon them under the label creative industry,[6] leaving them dependent on either the traditional art market, or the limited commissions handed out by public and private foundations. There are numerous other aspects that differentiate the problem of software development from other domains of immaterial production. I've sketched them elsewhere.[7] In the context of self-directed cultural or artistic projects, one issue seems to pose particular difficulty for open projects: quality control.

What's Good, And Who Is Better?

What makes a work of art a good work of art? How can we reliably judge the ability of one artist as comparable and superior over that of another? These are intractable questions that most people, even art critics, try to avoid, for very good reasons. Throughout the twentieth century, the definition of art as been expanded continuously to the degree that is has become self-referential (à la "art is what artists do", or "art is what is shown in art institutions"). As an effect of the ensuing uncertainty, aesthetic judgements are more than ever uncertain and therefore subjectivized, and the range of aesthetic preferences is extremely wide. The differences among genres, even if they can seem to be minuscule to outsiders, tend to be very significant for the ones who care. The result is that the number of people who share a sense of what makes a cultural product high-quality is usually very small. Except, of course, if the product is supported by massive marketing campaigns that artificially inflate this richness of opinion into mass markets. Thus cultural communities are either highly fragmented or commodified, making collaboration either exceedingly difficult or illegal.

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[5] **http://opensource.org/advocacy/jobs.html**

[6] The classic study still is Angela McRobbie's *British Fashion Design: Rag Trade or Image Industry*?, Routledge, London, 1988.

[7] See my essay 'One Size Doesn't Fit All' in *Open Cultures and the Nature of Networks,* Futura publikacije, Novi Sad, 2005. **http://felix.openflows.org/html/kuda_book.html** for an overview of these differences.

In software, this is different. It is usually not so difficult to determine what is a good program and what is not, because there are widely accepted criteria which are objectively measurable. Does a program run without crashing? Does it do certain things that others don't? How fast is it? How much memory does it use? How many lines of code are necessary for a particular feature? But it's not just that technical questions are 'objective' and cultural ones are 'subjective'. In order to be able to seriously contribute to a FOSS project (and therefore earn status and influence within the community) one needs to acquire a very high degree of proficiency in programming, which can only be gained through a deep immersion in the culture of engineering, either through formal education, or informal learning. Either way, the result is the adoption of a vast, shared culture, which is global, to a significant degree. It is this shared culture of engineering which makes certain measurable aspects of a program the defining ones. Faster, for example, is always better. While there is a slow food movement, extolling the virtues of traditional cooking over fast food, there is no slow computing movement. Even those subcultures which dedicate themselves to old platforms try to max them out (make them run as fast as possible).

This is not to say that there are no deep disagreements in the programming community that cannot be reconciled by references to objective measurements. There are plenty of them, usually concerning the virtues or vices of particular programming languages, or fundamental questions of software architecture (for example, within the FOSS world, the neverending debate over the monolithic Linux kernel versus the GNU microkernel). However, these differences in opinion are so fundamental that the communities which are built around them can still be large enough to find the critical mass of contributors for interesting projects.

However, the objectifying and solutions-oriented character of a widely shared engineering culture is not the only reason why the assessment of quality in software is not such a quarrelsome problem. At least as important is the fact that the tools/information necessary to assess quality are also widely available. Indeed, software is, at least in some aspects, a self-referential problem. It can be solved by reference to other software and determined within closed environments. A skilled programmer has all the tools to examine someone else's code on his/her computer. This is still not an easy task – bug fixing is difficult – but since every programmer has all the tools as his/her disposal, it can be made easier by increasing the number of programmers looking at problems. The more people search for the problem, the more likely

someone will find it, because, theoretically, each of them could find it. This is what Eric Raymond means when he argues that “given enough eyeballs, all bugs are shallow”. As a result, it is possible to gain a relatively unproblematic consensus about which code is of high quality, and which is not, and, by extension, to establish a hierarchy, or pecking order, among programmers.

This is not so terribly different from the peer-review in science. People look at each other’s work and decide what is good and what is not. The difference lies in what it takes to become a peer. For FOSS, all you need to have are the necessary skills (hard to master, of course, but available to the dedicated) and a standard computer with an internet connection. Not much of a hurdle for those who care. Now, it’s the quality of the code, assessable by everyone, that shows if you are a peer or not. In science what you often need is not just the necessary skills, but often a vast infrastructure (laboratories, machinery, access to archives and libraries, assistants, funding, etc.) to make use of those skills. This expensive infrastructure is usually only accessible to employees of large institutions, and in order to get employed, you need the right credentials. Thus, in science, peers are established by a mixture of credentials and positions. Because without those, you cannot seriously assess the publications of other researchers, for example, by repeating their experiments.

If peer-review is so essential to establish quality control, and yet it’s difficult to establish reliably who’s a peer, the project runs into troubles. The current difficulties of Wikipedia are instructive in this case. Wikipedia is an attempt to create an online encyclopedia, written entirely by users, which can exceed the range and quality of the most reputable traditional reference works. In just five years, hundreds of thousands of articles in dozens of languages have been written, and in quite a few cases, these articles are of very high quality. In terms of modularity and economic structure, Wikipedia is very similar to software development. This is one of the reasons why the open source approach has worked so well. Another reason for its success is that the Wikipedia community has managed to create a widely shared understanding about what a good article should look like (it’s called the ‘neutral point of view’, NPOV).[8] This gives a formal base-line (disputed perspectives on a subject should be presented side-by-side, rather than reconciled) in order to assess articles. However, these criteria are only formal. It says

[8] **http://en.wikipedia.org/wiki/Wikipedia:Neutral_point_of_view**. This issue is independent of the problem of people deliberately inserting false information just for the fun of it (or for more strategic reasons).

nothing about whether these perspectives are factually correct or in accord with relevant sources.

The basic mechanism of quality control in Wikipedia is the idea that as more people read a particular article mistakes will be found and corrected. So, over time, articles improve in quality, asymptotically reaching the state of the art. Given enough eyeballs, all errors are shallow. However, practice has shown this not to be the case necessarily. It holds more or less true for formal aspects, like spelling and grammar, which can be assessed simply by reading the article. However, in terms of the actual content, this model clearly shows its limits. Often, the actual facts are not easy to come by, and are not available online. Rather, in order to get the fact, you need access to specialized resources that few people have. If such facts are then included and contradict common knowledge, the chances are, that they get corrected as mistakes by people who think they know something about the topic, but whose knowledge is actually shallow. This is less of a problem in very specialized and uncontroversial areas (such as the natural sciences)**[9]** that are primarily of interest to specialists but a serious problem in areas of more general knowledge. It shows that even for functional works, the addition of more people does not necessarily help to improve the quality – even if these people are well-intentioned – because most of them do not have the necessary information to assess the quality.

Wikipedia is caught in the problem that it does not want to restrict the rights of average users in favour of experts, but, rejecting formal credentials, it does not have a reliable way to assess expertise e.g. the number of entries, or other statistical measures, show devotion, but not expertise. But given the fact that one cannot simply 'run' an article to check if it contains a bug, it is impossible to validate the quality of the content of an article simply by reading it carefully. In order to do that, one needs access to the relevant aspects of the external reality and this access is often not available. But because there is no direct way to recognize expertise, Wikipedia is open to all, hoping for safety in numbers. Given the highly modular structure and the factual nature of the project, supported by the NPOV editorial guidelines, the project has thrived tremendously. Paradoxically, the limitation of its method begins only to show after it has become so successful that its claim to supersede other authoritative reference works has to be taken seriously.**[10]**

[9] See *Nature* 438, 15 December 2005, pp 900-901, **http://www.nature.com/nature/journal/v438/n7070/full/438900a.html**.

[10] Wikipedia co-founder Larry Sangers thinks that these limitations are so dramatic that he is preparing, with the help of $10 million funding, to start another free reference work, *Digital*

Cultural projects, then, face two problems. If they are of an 'expressive' type, then the communities that agree on quality standards are so small that collaboration tends to be more club-like than open source. Even if the works are functional, like Wikipedia, the challenge of determining who is an expert without relying on conventional credentials is significant. Currently, the problem is side-stepped by reverting to simplistic egalitarianism, or, as I would call it, undifferentiated openness. Everyone can have a say and the most tenacious survive.

Undifferentiated Openness

The openness in open source is often misunderstood as egalitarian collaboration. However, FOSS is primarily open in the sense that anyone can appropriate the results, and do with them whatever he or she wants (within the legal/normative framework set out by the license). This is what the commons, a shared resource, is about. Free appropriation. Not everyone can contribute. Everyone is free, indeed, to propose a contribution, but the people who run the project are equally free to reject the contribution outright. Open source projects, in their actual organization, are not egalitarian and not everyone is welcome. The core task of managing a commons is to ensure not just the production of resources, but also to prevent its degradation from the addition of low quality material.

Organizationally the key aspects of FOSS projects are that participation is voluntary and – what is often forgotten – that they are tightly structured. Intuitively, this might seem like a contradiction, but in practice it is not. Participation is voluntary in a double sense. On the one hand, people decide for themselves if they want to contribute. Tasks are never assigned, but people volunteer to take responsibility. On the other hand, if contributors are not happy with the project's development, they can take all the project's resources (mainly, the source code) and reorganize it differently. Nevertheless, all projects have a leader, or a small group of leaders, who determine the overall direction of the projects and which contributions from the community are included in the next version, and which are rejected. However, because of the doubly voluntary nature, the project leaders need to be very responsive to the community, otherwise the community can easily get rid of them (which is called 'forking the project'). The leader has no other claim for his (and it seems to be always a man) position than to be of service to the community. Open Source theorist Eric S. Raymond has called this a

Universe, but this time edited, or at least supervised, by experts. See **http://www.theregister.co.uk/2005/12/19/sanger_onlinepedia_with_experts/**

benevolent dictatorship.**[11]** More accurately, it is called the result of a voluntary hierarchy in which authority flows from responsibility (rather than from the power to coerce).**[12]**

Thus, the FOSS world is not a democracy, where everyone has a vote, but a meritocracy, where the proven experts – those who know better than others what they are doing and do it reliably and responsibly – run the show. The hierarchical nature of the organization directly mirrors this meritocracy. The very good programmers end up on top, the untalented ones either drop out voluntarily, or, if they get too distracting, are kicked out. Most often, this is not an acrimonious process, because in coding, it's relatively easy to recognize expertise, for the reasons mentioned earlier. No fancy degrees are necessary. You can literally be a teenager in a small town in Norway and be recognized as a very talented programmer.**[13]** Often it's a good strategy to let other people solve problems more quickly than one could oneself, since usually their definition of the problem and the solution is very similar to one's own. Thus, accepting the hierarchical nature of such projects is easy. It is usually very transparent and explicit. The project leader is not just a recognized crack, but also has to lead the project in a way that keeps everyone reasonably happy. The hierarchy, voluntary as it may be, creates numerous mechanisms of organizational closure, which allows a project to remain focused and limits the noise/signal ratio of communication to a productive level.

Without an easy way to recognize expertise, it is very hard to build such voluntary hierarchies based on a transparent meritocracy, or other filters that increase focus and manage the balance between welcoming people who can really contribute and keeping out those who do not. Wikipedia illustrates the difficulties of reaching a certain level of quality on the basis of undifferentiated openness.

'Expressive' cultural projects face even greater hurdles, because the assessment of quality is so personal that, on the level of production, collaboration rarely goes beyond a very small group, say a band, or a small collective of writers, such as *Wu-Ming*.

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[11] Eric S. Raymond, 'The Cathedral and the Bazaar' in First Monday, Volume 3, No. 3, 1988. **http://www.firstmonday.dk/issues/issue3_3/raymond/** (all further quotes of Raymond are from the same article, unless otherwise noted).

[12] For the best analysis of the governance systems of FOSS projects, see Steven Weber, *The Success of Open Source,* Harvard University Press, Cambridge, MA, 2004.

[13] Jon Johanson, who gained international fame as the person who wrote the code to crack the DRM system on DVDs, and many others subsequently, lived at the time in Harstad, Norway

Open Culture Beyond Open Source

This does not mean that FOSS cannot be taken as a model for open cultural production in other fields. However, what seems to be the really relevant part is not so much the collaborative production aspects, but the freedom of appropriation aspect and the new model of authorship, centering around community involvement rather than individual autonomy. The GPL, and other such licenses, like Creative Commons, are very good instruments to enshrine these basic freedoms. These will create the pool of material in which a new, digital, transformative culture can grow. And indeed we are seeing the emergence of such resource pools. One example is Flickr.com, a rapidly growing repository of images, tagged and searchable, contributed entirely by users. While this is not a commons in a legal sense (the images in Flickr.com remain in the ownership of the author), nor, really, in intention, the fact that the resource as a whole is searchable (through user-defined image tags) does create a de-facto commons. The collaboration here is very limited, restricted to contributing individual works to a shared framework that makes it easily accessible to others. There is no common project, and collaboration between users is minimal, but it still can be understood as 'open culture' because it makes the resources of production, the images, widely available. The production of new cultural artefacts remains, as always, in the hands of individuals or small groups, but the material they work with is not only their own inner vision, honed as autonomous creators, but also other people's work, made available in resource pools.

At this point, this is entirely unspectacular. But by restricting openness to the creation of a pool of relatively basic resource material, rather than complex artistic productions, issues of quality control and the organization of collaboration, with all the necessary difficulties of coordination in the absence of clear markers of quality, are sidestepped. Nevertheless, over time, I think that such de-facto commons can contribute to a slow transformation of culture from a collection of discrete, stable and ownable objects, created by autonomous, possessive individuals, to ongoing adaptations, translations and retellings within relevant contexts. Perhaps out of this, a new sense of authorship will emerge, and new communities in which certain criteria of quality are widely accepted (akin to 'community standards'). Only once this happens, can, I think, really collaborative modes of artistic production be developed, similar to what we have seen in FOSS. However, if this happens at all, it will be a very long-term process.

• Author : Mary Anne Francis

• Open Source Fine Art: Infinities of Meaning for an Age of Finite Means

Unfinished Business From The Congress

This text develops an enquiry that I started at Open Congress, but for reasons of time was left in limbo, with the questions that I wanted to put to the event's participants unanswered. The discussion related to a question that was key for the Congress: the question 'how does open source (trans)port to art?'[1]

Various approaches to this question were pursued, which are documented and elaborated elsewhere in this volume. Mine entailed inviting Congress attendees – better called 'participants' – to 'open source' a work of art that I had produced, *The Blooming Commons* – a simulated flower stall, bricolaged from brightly coloured cleaning implements: pot scourers, feather dusters, sink plungers and the like.[2] In offering this contribution, I wanted, as an artist, to put the theory into practice; to research through practical engagement. This was more compelling since although I knew that the structure of the Tate event was realised as it was (as a Congress, rather than a 'conference') in order to encourage the enactment of open source in many ways, this would, nevertheless, tend towards reflection on art and open source, rather than embodiments of that conjunction. Furthermore, the frisson – or abrasion – of open source and art-in-practice was intensified by being staged at the Tate with its history of very different processes of cultural production.

In my presentation, I briefed the work's potential open-sourcers on the terms of their engagement with the work, issued as it was with a Creative Commons Licence (2.5). I also spoke about my hunch concerning the application of the idea of open source to art, indicating that I thought that art presented an exceptional case, compared to other cultural forms. And I hinted at the terms of art's difference, depending as it did, it seemed to me, on how our experience of a work of art is of a 'first order object', rather than a second order one, or 'copy', as it is with other forms of culture.

Participants took up the challenge with aplomb – see the Open Congress Gallery[3] although, regrettably, I have no photographic record of the

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[1] In using the term 'Open Source' rather than 'FLOSS', I am not wanting to privilege 'open' over 'free' software. Rather, I use the term as it has tended to be used (rather loosely) to refer to the area of agreement between 'Free' and 'Open Source' software proponents – here, for reasons of the way it opens up the work of FLOSS for my argument via certain rhetorical manoeuvres the term permits.

[2] For pictures of this in its 'original' state, see **http://opencongress.omweb.org/modules/wakka/Art**

[3] **http://opencongress.omweb.org/modules/xoopsgallery/**

most provocative example.[4] I had asked for a second 'feedback' slot, but owing to the number of people wanting to present to the Congress, this did not materialise. And so I didn't get to find out how the 'open sourcers' understood their work, relative to open sourcing other cultural forms, music, for example. For as I'd hoped, their work upon *The Blooming Commons* was material, with the piece being physically reconfigured at various points around the Tate. No one took up the offer to work upon the work by way of making copies of the original. But for want of opportunity to question my researchers, I didn't know if they had registered the fact that their material intervention marked a crucial point of difference in an open source approach to art, distinct from other cultural forms. Nor was I able to determine whether, like me, they then regarded this distinction as hugely exciting in its implications. For in the distance, I saw the possibility of troping the emancipatory and empowering politics of open source with aspects of an 'environmental' politics: one which recognises that the earth's resources are at risk from the pursuit of Capital.

As a sort of substitute for that discussion, I am rounding out the hints that I offered in my presentation, and again, here, (and developed as a contribution 'from the floor' in Felix Stalder's presentation).[5] Those fleshed-out hints comprise my first thesis – that the practical experiment was set up to confirm (or otherwise) via others' observations.[6]

But this thesis is exciting not only as it sheds (new) light on the relationship of art to open source production but also for the other theses – or proposals – that it in turn ushers in. This paper addresses those too.

Open Sourcing Art: An Exceptional Case

The question of how open source applies to art begs questions of what is

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[4] The details were relayed to me, verbally, by the protagonists: finding a little noticed outdoor sculpture in a recess to the left of Tate Britain's main flight of steps, the pair decided that the figure should be better clad around its midriff, so they added a feather duster to its fig leaf. Immediately, a security guard rushed out to remove the offending item. (The dictum that this story offers is that, in the absence of a public, art works are nevertheless, *always* being regarded.) As an instance of 'Open Source: Art' its merit is its cunning *double reading* – of two works of art at once.

[5] Note that, however, Open Congress didn't have a floor, or a podium, nor a ceiling, even. At least conceptually, it sought a horizontal architecture, much as the Tate's *literal* architecture in the form of the 'top-down' Clore Auditorium contested that by imposing an 'active-speaker, passive-audience' regime against the Congress' dictum that "everyone is a participant". The elaboration of my thesis was only made to a part of the Congress, and besides was a sort of footnote and did not elicit any response at the time.

[6] Using the model – or at least idea – of practice-based research in Fine Art.

understood by those terms, or entities. And contested though the meaning of the first is, at least in its more subtle aspects,[7] it is not nearly so contested as the latter, or subject to such tendentious definition.

Open Source: A Means Of (Re)Production

To quote from Wikipedia: "Open source […] relates to practices in the production of products which promote access to their sources".[8] Or to put this more abstractly: open source is *a means of production*. Hence its potential relevance to art, which is, after all – despite Wikipedia's welcome generality of reference to (just) 'practices' – not a common object for such practices. For the 'practices' of open source are typically, of course, software production. Construed as a means of production – as a method, even – open source is then usefully defined further as a set of conditions under which a given product/text is licensed; its legal framework. These conditions engage at once some aspects of the *form* in which that product/text is circulated and *certain circumstances of its use* – the way in which the entity proposed for 'open sourcing' may be re-produced. (Indeed, the concept of 'reproduction' is essential to open source. It is a process of *production* that occurs *via reproduction*; 'reproducing' in the sense of 'making copies' and in the 'genetic' sense of generating offspring – derivatives; 'related differences').

'The Open Source Definition' versioned as a licence, or referred to law, is reprinted in this volume, and I refer you there, and especially to clause 3 because of the role it has in the following discussion. Meanwhile, a brief look at:

Art

In the context of this discussion of how open source applies to art, I want to consider art in its 'auratic' state. Art which has an 'aura' is, of course, according to Walter Benjamin, and Robert Luxemburg, in the wake of Benjamin and stealing the aura of the former's 'Work of Art . . .' text, art with an 'unique existence'.[9] By definition then, such art is neither "the work of art designed for [mechanical] reproducibility" nor the "work of

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[7] The Wikipedia entry charts the history of the term 'open source' and its entanglement with 'free software'.

[8] **http://en.wikipedia.org/wiki/Open_Source**

[9] See Walter Benjamin 'The Work of Art in the Age of Mechanical Reproduction', *Illuminations,* Pimlico, London, 1999 and Robert Luxemburg, 'The Work of Art in the Age of Digital Reproduction' **http://www.makeworlds.org/node/77**.

art designed for [digital] reproducibility" because "from a digital text, for example, one can make any number of copies; to ask for the 'authentic' copy makes no sense".[10] The media of 'auratic' art are rather those that shun the imprints of industrial and post-industrial machines ('mechanised' and 'digital' production respectively) and bear, instead, the mark of the hand (though 'digital' relates, ironically, to 'finger'). In this scheme of things, 'the hand' of the artist is the guarantee of singularity: that which cannot be repeated (however much the art-market has mechanised its artists' production). Hence the media include paint or the techniques of traditional sculpture, for example. That other, more 'post-hand' (perhaps 'post-human' forms) – think of any Jeff Wall piece – can paradoxically acquire auratic status (notwithstanding Benjamin and Luxemburg) brings me to my next point:

Auratic Art: Its Currency

In the context of this discussion of how open source applies to art, it may seem perverse to focus on this form of art when, as Luxemburg reminds us, "technical reproduction" has "also captured a place of its own among the artistic processes", [11] as it had, too, when Benjamin was writing, via lens-based media in particular. But the very fact that 'technically produced' art habitually, if atavistically, acquires an aura, often via the fetishistic tactics of the art-market, is witness to a culturally dominant desire for aura: the singular, the unique. In the face of mass-production elsewhere in society, art makes technical production its 'exceptional' media.

(To put this anecdotally, and especially, to witness this 'desire' in practice: in my role as a teacher, I am frequently frustrated by BA students' wish to make unique objects. Their interest in mechanical and digital production by and large extends only to the way in which they serve the one-off artefact: the photographic exhibition or the video installation. This is in no way to slate them – and anyway, they know that auratic art has certain kinds of value beyond the economic: rather it is to see their likes and dislikes as symptomatic of a cultural attitude that they have been exposed to for twenty odd years and more.)

So: beyond the ascendancy of iterative media – those media that readily allow non-singular production – in many spheres of cultural production at large and of late, 'art' is still, overwhelmingly defined by artisanal forms. Hence my address to those for the purposes of asking: 'Open source: Art'?[12]

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[10] Robert Luxemburg, 'The Work of Art in the Age of Digital Reproduction', section IV **http://www.makeworlds.org/node/77**

[11] Ibid.

[12] While the value of this move (open source > Auratic Art) in definitional terms is clear, in

Open Source To Art: A Mode Of Resistance?

Translations are always political as much as they are also impossible, as Derrida reminds us, in the sense that the 'bearing across' as given by the term's etymology is never perfect, always letting in a 'difference' which is the gap of (political) desire.**[13]** The 'translation' here, of open source to art, admits a further difference.

In the long process of researching and producing Open Congress it is, with hindsight, clear that a somewhat abbreviated version of 'The Open Source Definition' tended to describe our approach to the area. (Well, perhaps I had better only speak for myself . . .) Inevitably maybe, this was one which concentrated on the word 'free' (respecting the nuances of meaning), and the way in which an open source approach to culture would enable 'modifications and derived works' for any artefact or text so nominated. (See clause 3 in 'The Open Source Definition'). That an interest in the processes of open source focused on this clause had to do, I think, with two related circumstances. The first concerns the role of 'appropriation' in aspects of Western culture. Hyperbolically describing *every act* of cultural borrowing as 'plagiarism' – in an inverted effort to make all re-usages of culture legal, or free from moral defect – Critical Art Ensemble reminds us that "Readymades, collage, found art or found text, intertexts, combines, detournment, and appropriation" have an ancestry of sorts in "the English plagiarists" who include in their illustrious number no less than Shakespeare.**[14]** They signal that swathes of Western culture are re-cycled (along with parts of other cultures, too, I might add). And as they propose, too, for reasons of technological invention, we now, more than ever, live in 'the age of the recombinant' – while many of the practices thus implicated are *illegal.*

So to the second circumstance of why I was interested in open source as

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as much as a category of practice is most typically construed, its value in strategic terms is less certain. Given that all modes of production are political, the benefit of bringing an 'advanced' technological practice (open source) to bear on one which uses technology very differently (Fine Art at large) is ambiguous. Why chose a 'hard case'? Because, if it works, open source makes huge gains? Precisely, moving on to think about the 'whys and wherefores' of this subject (open source: Art) is to slip the term of this enquiry, which is simply to ask 'how'.

[13] For the Derridean take on this, see, especially *The Truth in Painting,* University of Chicago Press, Chicago and London, 1987, in which Derrida stages the difficulties of translating the 'the truth in painting' and yet contends: '[u]ntranslatable: this locution is not entirely so'; pp 4-5.

[14] See 'Utopian Plagiarism, Hypertextuality and Electronic Cultural Production' **http://college.hmco.com/english/amore/demo/ch5_r4.html**, sections 4 and 1, respectively.

realised by clause 3 of 'The Open Source Definition', enabling as it does 'modifications and derived works': it allows some works and certain uses of those works to circumvent restrictive copyright. Open source can thus be seen in this way to 'reconcile' contemporary cultural practice with the law.

Yet despite the potential usefulness of open source in this way for art, the third clause is also highly problematic in the sense that it is difficult to realise for 'auratic' art. All of the other clauses (most of which are more peripheral) are more portable, although with clause 2, the question might be asked, pedantically, of how the program/source-code distinction translates to art. (That is to say: if 'art' can be seen as 'the program' that is offered for modification, then what is the 'source-code'? What aspects of *art's* code are presented, along with the finished work, to assist others' adaptations of any given work?)

The usual, un-exceptional media of auratic art do not readily facilitate a work of art to be produced more than once. Thus the reason why unlike with other cultural forms, our experience of art is of a first-order text. Yes, as Benjamin asserts "in principle a work of art has always been reproducible" as "man-made artefacts could always be always imitated by men", but this was – and still is – a thankless task.**[15]** Or to put it another way: the presence of terracotta copies of Greek statues, and of forgeries of Old Master paintings, did not for Benjamin, cause art's aura to disperse, or "wither", in his phrase. Even though a mould can be made or a tracing done, there is nothing of the same order as the drop down menu with its one click command to 'copy'; nothing with the ease of execution, as it were, as 'save as'. For open source software, the ease of making copies predicates the possibility of making modified versions of that software. This is a capacity that would benefit the artist too in modifying extant texts. But since auratic art does not readily allow copies – if at all – it militates against open source in this crucial aspect of the latter's method.

Of course, it's possible to argue that the skills required to modify an artwork (as likewise, with a piece of software) presume a fluency that should presume, as well, that starting from scratch would not be beyond that individual. And that the 'openness' that one-click copying enables is fatuous for those who do not have the skills to modify a given text – digital or otherwise.

But nevertheless . . . this may be quibbling when the new order of productionthat is the digital is centrally defined by a sort of reverse work ethic: that of indolence, or, to quote Steve Jobs, "minimal

[15] Walter Benjamin, as before, p 212.

effort".[16] Thus: in the face of digital production, the 'paradigm shift' that is open source, in Tim O'Reilly's well-known application of Kuhn's term, is resisted by auratic art.[17] Open source does not transport to art, at least with respect to the issue of the 'copy'. This makes art exceptional in the cultural realm. For all other cultural forms, bar one-off craft works (which may be regarded as a relative of art in this regard), readily enable iteration: cinema, performance, theatre, literature and music (both digital and live). And as they do they also facilitate their own adaptations.

Art Open Sources 'Open Source': 'Reproduction' As 'Remaking' Via Unmaking

However, when the project 'Open Source: Art' is defined as one of interdisciplinary endeavour, in which *an object* from one discipline is not just submitted to *the method* of another but is encouraged to interrogate that method, in the figure of a 'feedback loop', then art may be permitted to query 'open source' – as it is currently defined. Or to put it in the very terms of open source, however paradoxically so using the method to unpick the method, art is allowed to open source the method open source: to modify and make derivations of that term.

For as I was preparing my contribution to the Congress – the presentation of my work *The Blooming Commons* for the Congress*'* participants to open source (presumably, as I first thought, via being copied to begin with tedious though that would be) – it dawned on me that just because auratic art does not readily produce copies to be open sourced, the act of modifying any given artwork is not forestalled. Clause 3 can happen, or at least a part of it; as it provides for modified works. (The question of 'derived works' in the context of auratic art, when copying it is difficult, is ushered to one side by this discussion.) In the absence of a copy, an artwork can be modified semantically (as open source provides for in the idea of revision to a software code) by working on the artefact in its material dimension. This deviates from software practice where the 'source code' is left, materially, intact, somewhere on a hard drive or a server (though it doesn't have to be, but is, because it's useful, and, crucially, *easy* to do so). I realised that *The Blooming Commons* could be modified without a copy being made as long as I was happy to 'give up' the work itself. I was.[18]

I hoped that those participating in the re-make of the work would appreciate

[16] As quoted by Robert Luxemburg in 'The Work of Art in the Age of Digital Reproduction', section 1, as before.

[17] **http://www.tim.oreilly.com/articles/paradigmshift_0504.html**

[18] For a discussion the circumstances of this apparent generosity see **http://www.opencongress.omweb.org/audio/PartArt.ogg**

this nuance, or that fact that in this way, art was an 'exceptional', an 'unusual' instance of the method that is open source. I wanted them to see that art so realised took exception to the usual understanding of the term, in playing it at its own game by open sourcing it. Or failing that, to usefully modify my insight. But more so, I was hoping that the work's re-authors would further see the far-reaching implications of this turn.

The Exceptional Form Of Open Source As The New Paradigm

For while my original question to the area was to ask how open source enhanced creativity (expecting the debate would straddle issues of the value of the artefact produced by a unique artist over and above one collectively produced), this was speedily replaced by the question of the *value* of open source in its exceptional condition; in auratic art. For me, its value had to do with how it overhauls the regime of production in contemporary art. Precisely, it enables the replacement of a system of proliferating manufacture with one that recognises that resources may be finite and modes of production may have to respect for that, along with attention to sustainability. For rather than producing new material artefacts as vehicles for new meanings, 'Open Source: Art' enables the idea that we could instead revisit old art for new signification(s). More radical than any notion of the 'recombinant' to date,**[19]** this ethic of material recycling allows us to conceptualise the possibility of art continuing – both practically and ethically – in an era of environmental crisis.

(Does the claim that there is an ethical or morally defensible dimension to this practice rebut the outcry that I hear? For the counter claim that re-cycling art is nothing short of barbarous is resonant. For sure, it would lead to a whole host of issues about curating 'the tradition'. But then: I am not proposing that past art is ransacked for these purposes – although it could be: many an 'old master' has done that to another, and themselves . . . Rather, it's a proposition for the future, and one that could be optional, if substantially weakened, in that form. And nor am I suggesting that practices could cross-recycle, whereby a Rembrandt does service as an ironing board, as Duchamp's proposal for an inverted readymade memorably envisages, although this too is logically an option).

However, it is central to this argument to note that the idea of a practice of material recycling is relevant elsewhere: in principle, all artefact

[19] Critical Art Ensemble's notion of the 'recombinant' pertains *only* to semantic production; the practice of 'plagiarism' however broadly conceived. See 'Utopian Plagiarism, Hypertextuality and Electronic Cultural Production', as before.

production could have its reservoir of molecules restricted. In this way, open source, in its exceptional condition proposes a revolution in the means of production that is at once suggested by, and counteracting, the prevailing ethos of the practice in its 'original' condition. For while the role of open source in forestalling the ends of Capital is highly problematic (and as such much debated), one thing seems clear: inherent in its practice is a principle of proliferation, albeit largely digital and in the name of 'the commons'. And in this, if in little else, it belongs to the growth economy of Capital.

Except, perhaps there is a fault at the heart of open source that elevates its aberrant (art) form to its best instance. If we 'naturalise' the term, and think of 'source' as say, a mine of raw materials, then the notion of a finite entity prevails. This is not to contend that natural resources are all finite, (in the shorter scheme of things, outside the idea of a finite universe, not all are). Rather, it is to remind us, that open source presumes a source can be plundered ceaselessly, thus 'naturalising' unlimited production. This presumption is doubtless unconscious and well-meaning. When the 'source' that is 'open' regains a sense of limitation, art as the exceptional-as-unusual condition of open source production becomes, rather, the 'exceptional' condition as the term means 'the best', or unusually good. We ignore this at the peril of our future.

• Author : Julian Priest

• Join.

Join. is a collaborative artwork based on the children's colouring-in book classic, *Join the Dots*. Participants in Open Congress at Tate Britain were invited to be Developers of an original artwork one dot at a time.

Developers registered to join the aesthetic team, and, in turn, placed one dot anywhere on a provided blank sheet. Dots were marked with a sequentially allocated revision number.

Developers were asked to use their skill and artistic judgement to place a dot in such a way that it would contribute to a finished image which would be created by joining the dots with straight lines.

In order to register, developers agreed to release their dot under the Creative Commons share-alike by attribution license. (See Appendix A)

At the end of the Open Congress Development Period (7 and 8 October), registration was closed and the art work, complete with registration documents, will now be donated to Tate or a similar UK national collection.

The licensing of the work ensures that others are free to copy, distribute the work, or make images of it and derivative works, as long as all Developers are attributed, and the license is retained.

Developers
7th October 2005

- 1 Colm
- 2 Saul
- 3 Heather
- 4 Lucia
- 5 Peter Maloney
- 6 Tim O'Riley
- 7 Luci Eyers
- 8 Rory Okey
- 9 Amy Bish
- 10 Jon Hazell
- 11 Nicola Trew
- 12 Shu Lea Chang
- 13 Tim Jones
- 14 Corrado
- 15 Kt
- 16 Saskia
- 17 Sebastien
- 18 Marina
- 19 Chris Commons
- 20 Akeem
- 21 Lubna Azhar
- 22 Klara
- 23 Felicity Priest
- 24 Emma Jones
- 25 Kerry Hull
- 26 Lizzie Neilson
- 27 Stephen
- 28 Anne Taylor
- 29 Rosie Lancaster
- 30 Gini Simpson
- 31 Monika Parrinder
- 32 Colin Davies
- 33 Lucie Hernandez
- 34 Stefano Campigli
- 35 Prodical
- 36 Dunc
- 37 Aless Reba
- 38 Pras
- 39 David Goldenberg
- 40 Marc Tuters
- 41 Auka Touwslager
- 42 Otto E Roessler

- 43 Hoag
- 44 Anthony Iles
- 45 Rob Myers
- 46 Pierre Vella
- 47 Tom Corby
- 48 Adam John Hyde [*]
- 49 Louise Wright
- 50 C30,C60,C90,Go!
- 51 Rachel Baker
- 52 Sophie von Olfers
- 53 Henrik
- 54 Mirela
- 55 Liz Taylor
- 56 Fergus
- 57 Gemma
- 58 Tim Smith
- 59 Hayley Newman
- 60 Maleve, Nicola
- 61 Ele
- 62 Natxo

8th October 2005

- 63 David Berry
- 64 Trine Bjorkmann Berry
- 65 Alessandra
- 66 Rog
- 67 Marc Garrett
- 68 Karen Murray
- 69 Greg Jones
- 70 Thomas Thaler
- 71 Susan Diab
- 72 Manuela
- 73 Stefan Szczelkun
- 74 Olly
- 75 Pete Gomes
- 76 Cory Doctorow [*]
- 77 Luke Nicholson
- 78 Mikey
- 79 Helene Bjorkmann Berry
- 80 Arabella Bonny Bee Trumpeter
- 81 Julian Burton
- 82 Julia Lalla-Maharajh
- 83 Lance
- 84 Alan
- 85 Mary Anne Francis
- 86 Pedro Inoue
- 87 Noa
- 88 Raven
- 89 Occassionally Somewhere
- 90 Richard Barbrook
- 91 Linda Drew
- 92 Emily
- 93 Bob
- 94 Darrel Stadlen
- 95 Fred
- 96 Law's Burden
- 97 Maija
- 98 Matthew Robinson
- 99 Julian Priest
- 100 Apixel
- 101 Ron
- 102 John Stack
- 103 Jennifer Kirk
- 104 Mark Pheasant
- 105 Veverica
- 106 Atty
- 107 Mimika
- 108 Lisa Stansbie
- 109 Rebecca
- 110 Rob Campbell
- 111 Lori MacKellar
- 112 Felix
- 113 Jesi
- 114 Louise Kroeze
- 115 Hannah
- 116 U-SUN HU
- 117 Nick Thurston
- 118 Chung
- 119 Neil Cummings
- 120 Wei-ho Ng
- 121 Laurence

License Amendments

Two developers felt that the licensing of their dots was overly restrictive and made the following amendments:

- 48. Adam John Hyde added: "I dedicate my dot to the Public Domain".
- 76. Cory Doctorow replaced the suggested licence with: Creative Commons Public Domain Dedication

As the public domain stipulations are less restrictive than the Creative Commons ShareAlike license, authors wishing to include dots in for instance a non-attributed derivative work may use dots 48 and 76 only.

Derivative Works

A week after the 'Open Congress' on Saturday 15th October 2005, the *Join Dot Sprint* was held in the Tate Britain as part of the Dotty Tate family art event. Using A3 printed copies of the original artwork from the Congress, children were asked to join the dots in whatever order they liked to produce original derivative works, using the *Join.* source artwork. They were also asked whether they would like to donate their works to a UK national art collection.

Works by the following young artists can be seen at **http://www.joindot.org/i**

- Alex 027
- Alice Frances King 006
- Anna Redman 003
- Catherine Clampman 10 008
- Cherice / Karen Wotton 038
- Cherice 011
- Cherice Harris 010 047
- Emily Green 043
- Emma Winetrobe 024
- Harry Redman 015
- Hugh 001
- Jade Parker 018 025 032 042 046
- Jennifer Winetrobe 031
- Jess Townsend 022
- Kate Garry 009
- Leanda Harris 004 012 013 014 017 020 021 029 036 041 045
- Maedleine Bone 030
- Maija Timonen 002
- Miranda Townsend 019
- Nathan 044

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- PPXTO PP P Pe 026
- R.T. 016
- Sarah 023 034
- Sarah M 033
- Tania Pinheiro 028 037 039 040
- Tattiana Kaonga 007
- Zahra Hadi 005 035

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Numbering

Each version of *Join.* has a unique version number constructed as follows:

Branch.Revision.Derivative

A new sheet of paper begins a new major Branch of the piece with each placed dot recorded as a Revision Number.
Derivative works are numbered sequentially as sub-versions of the Branch and Revision.

During a development period Branches are marked ‘development’ and are marked ‘stable’ upon release.
The current release is: 1.121 stable.
The most recent derivative work is: 1.121.047

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- Felicity Priest
- Saul Albert
- John Heseltine
- Creative Commons
- John Purcell Paper
- Mark at City Officel Audio Ltd.
- Gary Monteith at DIP systems

100

78

7

6

8

32

106

113

13

82

By	JENNIFER WINETROBE : AGE 12
Version	HORSE
Date	15·10·05

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I would like to give this Join. to a public UK national art collection ☐

60

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Appendix A - Creative Commons Licence

Join. is released under the Creative Commons Attribution-ShareAlike 2.0 UK: England & Wales licence.
http://www.creativecommons.org/licenses/by-sa/2.0/uk

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http://www.creativecommons.org/licenses/by-sa/2.0/uk/legalcode

17th January 2006

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Lead Developer of *Join.* - Julian Priest
URL: **http://www.joindot.org**
Version: 1.121 stable

• Trebor Scholz

• Notes On Open Congress

Just returned from the British Isles and I am still thinking about what in fact happened at Open Congress. The event placed timely discourses around open source and free culture into the context of Tate Britain in London.

The attendees were much younger than those filling the halls of American or European media art festivals (but reputedly older than the predictable event audience in the city on the River Thames).

The organizers intended to facilitate a congress rather than a conference. They aimed for a break down of the audience-speaker divide. But in the case of the top-down architecture of the Clore Auditorium at the Tate the desired genuine interplay and role switching was hard to achieve. A stage remains a podium. The listeners in the auditorium remain pacified in the cinema-like dark. Smaller, informal workshops levelled the usual conference hierarchies much more successfully. The Seeds for Change workshop on rough consensus building in groups was useful. It added an activist perspective to the emerging field of 'cooperation studies' – a domain almost completely occupied by business analysts. The workshop demonstrated that thinking about groups, online or off, does not have to be in the service of the ebays and amazon.coms of this world. (They hardly need our help.)

The facilitators of Open Congress realised the limits of what Geert Lovink and I have called 'panelism'. Who wants to hear an academic star read a paper (however brilliant it may be)? We can read the text online before the event! Open Congress was part of a series of linked events also including the World Summit on Free Information Infrastructures (WSFII), and Future Wireless. The idea of linked, parallel or sequential events is useful as people coming in from afar get rewarded with cultural intensity once they are over their jetlag. One of the events that followed was a Cybersalon talk by Gilberto Gil, the Brazilian cultural minister/singer/songwriter and open source proponent.

Prior to the congress, the facilitators organized a series of public meetings. As they pointed out, these gatherings were as formative for them as the actual event. The idea was to keep the day-to-day processes of the event organization transparent. On the Open Congress wiki visitors to the site could read how much money was available and who sponsored the effort. Things became a bit uneasy when contributors were asked to post their fee requests on the site. I appreciated the spirit behind their statement "You name your fee and we will tell you if we are willing to pay that for you". Do we ask more, less or the same as the other guy? Conference economies are always a provocative topic.

In her compressed presentation, the media theorist and sociologist Tiziana

Terranova joined Richard Stallman in his insistence on the difference between open source and free software. Terranova pointed to the trend of harnessing cultural production and sharing culture. To what extent can open infrastructures such as the internet support Manuel Castells' ideas of boot-strapping, autonomy and self-organization?

McKenzie Wark read from his text 'A Hacker Manifesto' in which he argues for the centrality of the property question in discourses of openness. Felix Stalder correctly questioned the simplistic adaptation of open source principles by other spheres of culture. He emphasized that the free encyclopedia Wikipedia is swarming with factual mistakes. Stalder described Wikipedia as a model that requires significant numbers of users, which language spaces other than English do not offer. I was not able to go to many presentations that I would have loved to see because they were scheduled concurrently. This frequently happens at larger events. (It is a problem that is difficult to solve). Open Congress asserted questions about conference formats as much as it started to sort out some of issues of Free, Libre and Open Source Software; FLOSS, that is.

Brooklyn, 16 January 2006

• Author : Johanna Gibson

• Open to Question: The Open Congress Event and its Users

The relationship between creativity and the economic models that suppose the preconditions for that 'creativity' is perhaps one of the most significant interrogations undertaken by open source models of innovation. In particular, the intellectual property framework for recognising creativity, rewarding it and encouraging it within the 'creative economy' has seemingly institutionalised certain models of creativity while marginalising others, including the collaborative and incremental innovation suggested by open source perspectives. In this respect, the Open Congress event at Tate Britain in October 2005 was an important de-institutionalisation of not only the traditional models of creativity, but also the traditional frameworks in which these processes are debated.

The concept of creativity and concerns over access to creativity and knowledge are currently subjects of international debate and unprecedented attention. Specifically with respect to the digital environment, the controversies and issues arising through physical forms of protection (technological protection measures or TPM) are of special significance. The increased policing and criminalisation of the use of digital works, and the current campaign concerning the drafting of a treaty on access to knowledge,**[1]** are of particular relevance and were debated strongly at the Congress. There is intense public interest in the concepts of creativity, of authorship and of knowledge and the two days of debate at Open Congress were no exception.

The growing prominence of economic (and intellectual property) models of creativity (together with the increasing emphasis on international competitiveness within a global knowledge economy) is one of significant influence in the way in which creativity is understood, recognised and reproduced in its most general sense. Where knowledge becomes commoditised as economic products to be traded and to be coveted as assets of a society, the relationship between knowledge commodities and the social and economic values of a society becomes more pronounced.

Intellectual property laws are put forward as contributing to the circumstances necessary for economic, social and intellectual development of a civilised society, through the facilitation of the market necessary for creativity. While copyright remains immediately relevant here, other categories of intellectual property have become increasingly relevant to the conceptualisation of creativity. Further, it is the means by which the originality and novelty of culture and creativity becomes sensible. Copyright makes sense of cultural innovation.

[1] More information on the Treaty on Access to Knowledge can be found at **http://www.cptech.org/a2k/**

In the case of the Open Congress event, the conflicts between this simplification of the creative process and the implications for diverse approaches to creativity are of significant interest. The operation of notions of creativity in software development is indeed somewhat subtle within the broader adoption of the debate. While intellectual property rights are seemingly part of the infrastructure of civilised values of creativity towards which all legitimate citizens will strive, free software communities and, to a lesser extent, open source communities, are disregarded as unpredictable, 'primitive' and dystopian.

Open Congress, to varying degrees, motivated the creativity debate in these models of innovation and enterprise beyond the ways in which they might be reconciled with conventional forms of protection. Importantly, not only the commercial environment but also the circumstances for innovation and development were foregrounded in this momentous intellectual and creative event. In particular, the seemingly common sense formats for intellectual debate and the discursive power of these conventional frameworks were somewhat unsettled by the kind of collaborative models suggested by Open Congress and indeed in open source and free software spheres more broadly.

The Open Congress format of participation and open interrogation was instructive in revealing the way in which various cultural institutions (including that of intellectual property laws) are implicated in the social recognition of 'creativity' and 'genuine' creative output. Indeed, this made it possible for the various groups to consider the way in which 'legitimate' institutions somewhat de-legitimate the negotiation of intellectual property that occurs through efforts such as free and open source software. In particular, the 'organised' structure of a conventional conference confers a certain amount of control upon the debate, producing a kind of 'creative accountability'. This process can be understood more broadly in the context of open source and its relationship to intellectual property laws. In other words, the conferral of control in the case of the software industries produces a kind of 'creative accountability', as it were, through the construction of an 'author' in what is otherwise an industry of distributed, collaborative and incremental development. It is this distributed development that is somewhat 'suspect' in conventional economic models of creativity. Of particular interest was the extent to which this suspicion extended to Open Congress itself. This was particularly striking, since that the Congress aimed to produce (and indeed achieved) a sense of a more participatory, non-hierarchical and de-institutionalised forum in which to debate these issues.

The purposeful and personal control that operates in conventional individualised models of creativity and innovation maintains a kind of logical and predictable narrative of authorial intent and originality that is entirely compatible with Western or capitalist models of progress and innovation as economic activities (including the models offered by intellectual property frameworks). Intriguingly, this same purposeful intent was expected of Open Congress, as a 'conference', and its 'absence' was unsettling to some participants – an important and significant achievement in itself.

The lessons of Open Congress were instrumental in identifying diverse communities and processes of innovative practice. The Congress demonstrated a significant and manifest characterisation of the participation and collaboration of users and producers in the innovative process. Indeed, the distinction between 'creator' and 'consumer' was itself made genuinely open to question.

• Author : Neil Cummings

• Welcome to Open Congress... and its legacy

First: a few words about Critical Practice, the collaborative cluster of researchers, academics and artists at Chelsea College of Art and Design that initiated Open Congress.

Critical Practice recognizes that recent, dramatic changes in creative practice have been brought about by shifts in the social, political and financial construction of society. Rapid technological developments in information exchange and capital movements have, for instance, diffused traditional cultural distinctions and reconfigured economies of value.

In this new environment our practices – as artists, curators, designers, historians and theorists, and their interpretation, or how they, in turn, are theorized, historicised and administered – are no longer separate concerns, or indeed the prerogative of different disciplines. The Critical Practice research cluster intends to engage with the various forces that are implicated in the making of art, and the increasingly devolved experience of art made available through art institutions to their audiences.

Some of us within Critical Practice have been interested in collaborative art practice, in issues of access and participation, institutional structures, the impact of digital technologies and social exchanges like generosity and friendship. What we recognised is that these themes provide tools to enable us to think through the conventions of art's authorship, its ownership and distribution; they give us a critical purchase.

Many of these themes seemed to connect directly to what we knew of the development of Free/Libre and Open Source software – FLOSS, and more generally copyleft licensing and the Free Culture movement. So we began to wonder if, and how, these FLOSS development methodologies could map onto or into the creative practice that we were interested in. So a core group began to research, convene and discuss. And we began to see how issues of collaboration, self-organisation, ownership, access and participation were emerging in all manner of cultural practices. Examples of such initiatives include: open-law and access-to-knowledge (A2K) campaigns; peer-to-peer networks; the struggle over the commodification of knowledge brought about by restrictive Intellectual Property (IP) policy which has resulted in 'open' knowledge projects like Linux; the struggle over the ownership of knowledge from the human genome project (genetic information); copyleft licensing projects, and the Wikipedia project, which opens up access to the production of knowledge. We learnt about initiatives calling for open source democracy, and about 'open' organizational and business models. Critical Practice realised that it would be disingenuous to separate art and its institutions from these other social forces and processes, so we tried to mesh with these, and engage our

research where we recognized parallel or related drives.

In April 2004, Critical Practice approached the Tate about the idea of a conference using FLOSS as its starting point. Chelsea College of Art and Design was imminently to move into a historic military hospital next to Tate Britain and there was a general mood of good-will between the institutions about working on joint-events. Tate was interested in the exchange and we began discussions with the Education Department about the structure and content of a conference. We made a bid to the Research Committee at Chelsea for funding, and secured £10,000 to support the project.

In January 2005 we set up our website **http://www.opencongress.org** using OpenMute's **http://www.openmute.org** free suite of tools, and we started a wiki – a free software application that enables collaboration and participation, in that anyone can edit and contribute text, pages and content to the site. Through using the wiki, we began to engage with a wider related community, both on and off line. We also began to mesh with other organisations that were using a similar suite of software tools and shared similar themes. We became attached, related to and inspired by the Season of Media Arts London (SMAL) and learnt enormously from a collaborative student initiative at Chelsea **http://www.chelseawiki.org**.

It was becoming obvious to us that organisations interested in FLOSS-like practice should also conduct themselves in an open, transparent and accountable way. In management terminology we were sharing 'best practice' with other groups, and clearly 'open' organisations learn and transfer knowledge extraordinarily quickly between one another. There was a powerful moment when at one meeting it dawned on us that it would be disingenuous to organize a conference *about* issues arising from FLOSS development without consistently and ethically *embodying* them.

So, this is where it got very, very exciting, but rather messy. We used guidelines from a website **http://www.openorganizations.org** on how to practise as an 'open' organization. We tried to learn to be open, transparent and accountable in all we did, devolving decision-making, and using the notion of a 'rough consensus' to make those decisions. From this point on, Critical Practice was transformed and time was stretched. Discussions were often long and circular, new participants had to be constantly brought 'up-to-speed', making decisions and acting upon them often dissolved into deferment, and as Jamie King predicts in his text 'The Packet Gang', by default a 'gang' or core group emerged amidst a swirling multitude of participants.

We evolved the idea of holding public meetings –meetings 'open' to anyone

who got to hear about them at places in London such as the Royal Festival Hall, a private members club, a studio, an exhibition, a café at Chelsea, etc. There were thirteen in all. And we started to post details, agendas, meeting notes and action points on our wiki, so we could build a collaborative record, for all to see, of the process we were actively engaged in.

At these large and lively, or small and intimate meetings we began to draw up lists of possible participants and to generate themes and interests that could help us structure our conference: these began to coalesce as Governance, Creativity and Knowledge. And we began to think of them as ecologies, as meshed networks of participants and resources. We also realized that the conventional academic form of the conference – famous speakers, passive audience – was inappropriate for our content; that we needed something much more open and participatory. The collaboratively developed conference became a congress with multiple strands, with simultaneous talks, presentations and workshops.

The other side of this instantiation of a FLOSS-inspired practice was our interface with our partner, Tate Britain. Initially we discussed involving our host in the project, through actually addressing some of questions raised by FLOSS practice to the institution itself; the deputy director could discuss Tate governance for instance, curators and educators could make presentations on issues of access and accountability in a public museum, events could happen in the galleries, etc. For complex reasons none of this happened: Tate's role in the project slowly diminished from actively developing the congress to being its infrastructural host. Overworked Tate staff slipped into cruise control, and with all their experience set about organising a conference, with Critical Practice as the content provider.

In June 2005 we were beset with demands to meet Tate print deadlines with lists of confirmed speakers, technical needs and conference packs. What we actually had at that moment was a swirling mass of possible participants nominated through our wiki, an innovative structure comprising multiple strands in different locations in the museum (ideally all the spaces should be wirelessly networked), and a decision making process that was, at times, indeterminate. Tate, with its top-down management hierarchy, needed us to fit a template, and we couldn't. We probably appeared badly organised and incapable of meeting deadlines. Actually we were differently organised and when deadlines loomed acted with enormous collective energy and precision. This made our relationship – with the best will in the world – difficult; fraught for both parties.

In July 2005 we began to invite people from our wiki-generated participants list; some were self-selected, others had made proposals and some had been collaboratively nominated; many were international. We wondered if we should allocate the budget to recognize these differences. Who should we pay? And who should decide whom to pay? At one astonishing meeting, where we were struggling to agree on how to allocate our financial resources equitably, we decided to post our then total budget on-line, on our wiki. And we encouraged our variously invited participants to post an estimated budget of how much they needed to enable them to participate; fees, flights, accommodation and per-diems. Our transparency with public funds was (to us) a revelation; our funding, its allocation and the decision-making processes are there for all to see. And it more or less worked, although because the participants were rather a fluid group it was rather messy, and we simply could not afford everything.

As the congress loomed, the mismatches of organisation practice between Tate, the core 'gang' of us, and the sixty or so associated individuals became ever more apparent. Although what also became clear is that 'open' organisations are exceptionally good in a crisis; when participants feel invested in a project their generosity, energy and flexibility is enormous. Wireless London networked appropriate Tate spaces, simply and without fuss, with the support of the Tate on-line curator (who also sponsored, in-kind, the webcasting and archiving of many of the congress events, where that was technically possible). The organization formerly known as SMAL had become NODE.London, and allowed us to share, with Cybersalon and World Summit on Free Information Infrastructures (WSFII), international speakers and technology. Project 'leads' from all three groups raised additional funds from the Arts Council of England, so that you can read what I and others have written about the events in this publication.

If, throughout the organization of Open Congress we tried to conduct ourselves in an open, transparent and accountable way, we nevertheless failed on many accounts. Much of our organization was shambolic, many of our invited participants felt the effects of this as we struggled with deadlines and schedules, and some of the more 'institutional' participants we invited withdrew. Our interpretation of this is that certain 'institutionalised' individuals need fairly constant reassurance as to who they are dealing with, and a familiar structure into which they will fit. This was something we were not able to provide. But the opposite and much more positive effect was that many participants self-organised, invited others, curated their own panels within the congress structure,

proposed workshops and installed stalls in the Clore Gallery Foyer at Tate. Many individuals invested heavily in the congress and we all collectively benefited from their generosity.

For Critical Practice, organizing and developing a project using FLOSS-inspired practices has been a very sharp learning curve, and (mostly) a thrilling process. A conference became a congress, ideas were genuinely contested and developed, and there was no audience, only participants.

• Key Texts in the Open Congress Research and Development Process

• Paper

Stoller Bismarck, *Games, Fights, Collaborations, Kunst und Cultural Studies in der 90-er Jahren,* eds. Wuggenig, Kunstraum der Universitat Luneburg, Luneburg,1996.

Pierre Bourdieu, *Outline of a Theory of Practice,* especially Chapter 4 'Structures Habitus Power,' Cambridge University Press, Cambridge, 1977.

Nicolas Bourriaud, *Postproduction: Culture as Screenplay – How Art Reprograms the World,* Lukas and Sternberg, New York, 2002.

Antonio Negri and Michael Hardt, *Empire,* Harvard University Press, Cambridge, MA, 2001.

Otto E. Rössler, with the participation of George E. Lasker and Ayten Aydin, 'Delectatio in felicitate alterius – Benevolence Theory' in *Personal and Spiritual Development in the World of Cultural Diversity*, Volume 1, G.E. Lasker and K. Hiwaki, eds., The International Institute for Advanced Studies in Systems Research and Cybernetics, Windsor, Ontario, Canada, 2004.

Alan D. Schrift, *The Logic of the Gift: towards an ethic of generosity*, Routledge, London, 1997.

• Web

A Charter for Open Organizations **http://www.open-organizations.org/**

David M Berry and Giles Moss, *The Libre Culture Manifesto* **http://www.libresociety.org**

http://www.creativecommons.org

Critical Art Ensemble, *The Financial Advantages of Anti-copyright* **http://www.critical-art.net/books/digital/tact8.pdf**

http://www.indymedia.org.uk/

Lawrence Lessig, 'Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity' **http://www.free-culture.cc/**

Robert Luxemburg, 'The Work of Art in the Age of Digital' Reproduction' **http://www.makeworlds.org/node/77**

Eben Moglen, 'dotCommunist Manifesto' **http://www.emoglen.law.columbia.edu/publications/dcm.html**

Stefan Merten, 'Milestones on the Way to a GPL Society' **http://www.oekonux.org/texts.index.html**

McKenzie Wark, 'A Hacker Manifesto' **http://subsol.c3.hu/subsol_2/contributors0/warktext.html**

Trebor Scholz, 'A Grammar of Free Co-operation' **http://www.freecooperation.org/**

Seeds for Change, 'Consensus Decision Making' **http://www.seedsforchange.org.uk/free/consens**

Glossary

commons (the)

The commons are resources over which there can be no right of exclusion, and are therefore resources which cannot be converted into property. Historically, this has referred to animal grazing rights, although recently knowledge, language and creativity as well as genetic material and 'human rights' (amongst other cultural products) are being reconfigured as legally defined commons.

copyleft

A generic term used to designate a plethora of licenses that aim to limit the power of copyright, and enrich the **Commons**. See **Creative Commons** and **GNU General Public License**

copyright

Is the legal right to exclude others from using resources and profit from creative labour. Copyright was developed in the 18th century to give limited protection to authors and publishers from unauthorised copying of a given work. Recently copyright has become a blanket tool (currently extended to the life of the author plus 70 years) for turning creativity into property.

Creative Commons

The Creative Commons are a suite of licenses that extend rights from the author of a work to potential users. Based on the **GNU General Public License**, Creative Commons Licenses enable others to copy, alter and redistribute a 'work' as long as the source is acknowledged, and as long as those rights (to copy, alter and redistribute) are extended to others. Extending these rights to others (share-alike) is the core of **Copyleft** ideology. See: **http://www.creativecommons.org**

Critical Practice

A cluster of researchers convened around 'knowledge', 'creativity' and 'practice' at Chelsea College of Art and Design, University of the Arts London.

FLOSS

Conventionally, the source code that runs proprietary software – in operating systems like Windows or Macintosh OS – is not released to us, its users. Essentially, we license the code's functionality from the manufacturer and they own and prohibit access to the code itself. Free, Libre or Open Source Software (FLOSS) is any computer software

distributed under licenses (see **GNU General Public License** or **Creative Commons** or **Linux**) that allows others to copy, modify and redistribute the source code.

Free Software
See **FLOSS and GNU General Public License**

gift
A gift economy is an economic system in which goods and services are given, rather than traded. Receiving a gift triggers the obligation to reciprocate; the counter-gift necessitates a return, and so on, endlessly. Gift economies in the form of communal (see **Commons**) giving and receiving of resources are almost universally practised – think of a blood bank, or academic publishing. Interest in the gift and the protection of a commons of knowledge, creativity and governance has intensified due to the expansion of property rights through **Intellectual Property** legislation.

GNU General Public License
The GNU GPL is a revolutionary license for software which guarantees the following freedoms: *(Freedom 0) The freedom to run the program, for any purpose. (Freedom 1) The freedom to study how the program works, and adapt it to your needs. Access to the source code is a precondition for this. (Freedom 2) The freedom to redistribute copies so you can help your neighbour. (Freedom 3) Freedom to improve the program, and release your improvements to the public, so that the whole community benefits. Access to the source code is a precondition for this.* From the Free Software Foundation: **http://www.fsf.org**

Intellectual Property (IP)
As the words indicate, Intellectual Property legislation seeks to make property out of the creativity of the human mind; **IP** refers to a legal entitlement attached to an expressed form of an idea, thought, or creative act. These legal entitlements (see **copyright**) enable entitlement holders to exercise exclusive control over the use of the **IP**. Such entitlements are treated as equivalent to physical property and may be enforced as such through law.

Linux
Perhaps the most well known FLOSS software project. In August 1991 Linus Torvald posted an online request for help with a fledgling operating

system he was developing. A month later, he put the code for this system online, enabling visitors to download, run, and suggest or write their own improvements. In 2005 it was the only operating system with a growing user base, written, run and tested by enthusiasts the world over. See **http://www.linux.org/** .

openness
The structures that organisations typically use for decision-making are closed: individuals are often unaccountable, abuses of power are hard to prevent and knowledge is hoarded. Open organisations attempt to be transparent, accountable, public and truly participatory communities. (Seen **Wikipedia** as an instance of **openness.**) See: **http://www.open-organizations.org**

open source
See **FLOSS**

software
A code that runs on a computer, and makes the computer a useful tool. An operating system is the most frequently used tool on a computer. Think Windows and Mac OS if you're a proprietary meanie, and Linux if you're a **FLOSS** geek.

Wikipedia
An Open Content encyclopaedia that runs on **Open Source** software. The wiki software engine enables the collaborative **gift**-like contribution of content to be put to use as a **common** encyclopaedic good; contributions are peer reviewed and survive consensually in a real-time democratic process. Wikipedia currently houses one million articles in 105 languages. See: **http://www.en.wikipedia.org**

A Glossary for Open Congress at Tate Britain, 7th and 8th October 2005

Compiled by Critical Practice, Chelsea College of Art & Design, London

• WhatIsWsfii - Introduction by Jo Walsh

The World Summit on Free Information Infrastructures is a gathering of practitioners, who are also thinkers, in open source GIS, software and hardware, community FM radio and WiFi networking, open information/knowledge, open education, open money ...

Wsfii seeks to have permanent impact on the venues of our gatherings. Wsfii may, for instance, leave behind functioning connectivity between villages or institutions that will keep the network alive. Wsfii is being mentored at the Djursland Institute in Denmark, which is setting up a research and training institute in rural wireless networking.

The next major Wsfii gathering, in Bangalore in November 2006, will seek to bridge the gender, disability and North-South divide among the technology experts of the world. Wsfii also seeks to have positive impact on Mission 2007, a project to connect all of India's villages, as well as on grassroots NGOs in India.

Wsfii is an attempt to illustrate, by demonstrating, a potentially new kind of technological whole which is greater than the sum of its parts; a technics that emphasises original and autonomous creation by humans, built on open standards, interfaces and tools.

In Volume 1 of his classic *Technics and Civilisation*, Lewis Mumford describes the "paleotechnic" era of early industrial capitalism, which preceded the "neotechnic" era of the Machine Age, which was brought about by the availability of standardised tools, open best practices and a reform-driven consideration by 'professional' technologists for obviating some of the clearly negative impacts of new technology on human life.

Trade secrets, sometimes important, sometimes merely childish empiricism, retarded the cooperative extension of knowledge which has been the basis of all our major technical advances; whilst the system of patent monopolies was used by astute business men to drive improvements out of the market, if they threatened to upset existing values, or to delay their introduction - as the automatic telephone was delayed - until the original rights to the patent had expired.... [The machine] produced during the paleotechnic era was the systematic negation of all its characteristics: nothing less than the empire of muddle. ... The new struggle was over the system itself. ... The new machines followed, not their own pattern, but the pattern laid out by previous economic and technical structures.

The Paleoinformation age is drawing to a close; Wsfii is an ongoing attempt to put together a picture of what a true Information Age can look like. Each of Wsfii's activities is a kind of Architecture of Participation, an open Collaboration, an ongoing public description of the Process of Creation. The domains Wsfii has featured are those activities that have been very affected by open source software and the "Hacker Ethic" that underpins its creation. The domains this ethic can affect are innumerable. Every kind of research effort can be re-oriented, from protectionist bubbles formed by the pressure to Be First, towards a space into which we can all arrive together, by working on the things that we enjoy most, having the means to contribute to enhancing the things that we like, and getting together to talk about it. There is no 'We' in Wsfii. Wsfii belongs to anyone who wants to tend to their part of it. Everyone is encouraged to create their own Wsfii out of their own intersection of interests. Wsfii, in being, can create more Wsfii, everywhere

At this point in history, 1952 A.D, our lives and freedom depend largely on the skill and imagination of managers and engineers, and I hope that God will help them to help us all stay alive and free.

Kurt Vonnegut, "Player Piano"

last edited 2006-01-26 05:00:30 by JoWalsh

• Author : Mike Lenczner

• WirelessFreeNetworksWhyTo

Why Build A Community Owned and Run Wireless Network? There are two ways to interpret this question. The question asks for reasons why creating and sustaining a free network (often a Community Wireless Networks or CWN) is important. The question could also be what are our motivations. The answers to the second have a lot to do with sharing a beer, with the joy of having friends who understand your jokes and the typical hacker response of “because it’s there”. The first question is what I'll try to address here.

1) Free as in speech. This is a biggie. Access to information has always been important and in an “Information Age” it is becoming essential. The concept of network-neutrality is that network operators should provide non-discriminatory transport on their networks between the endpoints of the Internet. Community Networks are important because there is much less of a chance that there will be interference in what content or type of content is sent over them.

None of us want other people to make decisions on our behalf of what information we should have access to. This problem recently occurred in Canada where a telco was discovered to be blocking access to a website that had information on a continuing strike by its employees. The scary thing is that we depend upon not having a monopoly of ICT (Information and Communication Technology) infrastructure to even be able to discover that information blackouts or content discrimination are occurring.

2) Free as in beer (and real as in beer). It doesn't seem like a deep and weighty reason, but the plain truth is that sometimes we can do it cheaper, faster, better than the telcos. There are many instances of market failure in telecom. It might be that no company is offering wireless internet for a reasonable rate at your favorite coffeeshops. Or it might be that no ISP is building a business model that includes free metropolitan traffic for its users. By offering that service – whether it's a mesh node, a hotspot or a crazy optical datalink that you cooked up – you are making an impact on people's lives in your community. Whether that network or service is completely free of cost at the point of access or not, the importance lives in the act of bringing something real and useful to your community.

3) Raising Awareness The concept of a free network is important. In the same way that only seeing one map prevents alternative or critical thinking about a place, only having one way of thinking about local ICT infrastructure makes it difficult for people to imagine any another kind of network. It's important for people (both regular and geek) to be made aware that there are always other ways of doing things – including in telecommunications. The default

sales package from the local telco/cableco *isn't* the only imaginable way that people could connect. Even if your local mesh network has only 25 users, it has a larger impact on your community's way of thinking about telecom infrastructure. Things like fixed IP addresses enabling user hosting of servers, allowing access to all ports, and symmetrical upload/download speeds are political points worthy of interest and discussion. Community Wireless Networks are often high profile and they raise these questions.

4) Alternative design values for networks. Having alternative visions for networks is not only about network-neutrality or pico-peering. It can also be about promoting art and culture or encouraging people to get to know their neighbor **http://www.neighbornode.net/**. Infrastructure is *always* designed with values and a set of priorities – from roads to cell-networks. And those design choices shape us and our interactions through our daily use of those infrastructures. Community networks are opportunities to have you or your group's priorities reflected in the infrastructure that your community uses.

5) Think Globally, Act Locally This last reason is the one that keeps me involved in CWNs on those rare occasions when there isn't time for the friendships and I don't really feel like beer.

Unlike many of the other worthwhile and important Free/Open projects (like F/LOSS, copyright, community mapping, civic information, free/open hardware) for Community Wireless Networks to happen, people have to get together. Physically. As in getting out from behind our desks, driving or taking the bus to a meeting place, and introducing ourselves to new people. Once you meet these people you have to find some way to work together over long periods of time with little resources and different styles and motivations. You have to figure out how to get permission from city hall to attach that antenna. You have to agree on stuff like Acceptable Use Policies, the legal status of your organization, bookkeeping and press releases. It is not easy. It is rewarding. But the point here isn't that it's ultimately enjoyable. The point is that by being involved in CWNs we are taking the philosophy, goals and dreams of these online projects, and finding ways to bring them to life in physical form in our local communities. We are forced to talk to neighbors, engage with building owners and find ways to split the bill at the end of the meeting. These are important lessons for the Free/Open/internet community. If we ever want to have the world reflect some of the aspirations of this larger movement, we will have to be able to work together in local groups in our communities. CWNs (or free networks) are a part of larger online movement simultaneously learning and teaching how to do just that.

• Author: Karel Kulhavy

• User Controlled Technology (UTC)

Intent

The intent of User Controlled Technology is to provide the end-user unrestricted access to intellectual property (IP) including the tools used to create it, in perpetuity.

Detailed meaning

UCT intends to give the user control over the technology and providing opportunity to learn, create and profit. For example:

* The user may study and learn from UCT.
* The user may manufacture a product based upon UCT.
* The user may participate in development of UCT.
* The user may enhance or correct UCT.
* The user may integrate UCT into any system.

What can be done with UCT?

* Technology can be developed from scratch
* Products can be used for individual needs
* Technology or product can be exploited economically
* Servicing the product can be exploited economically

Why UCT and not free, open etc.?

There is a proliferation of "free" and "open" licenses that provide various degrees of freedoms. UCT is unrestricted access to "Intellectual Property" including all of the tools used to create it.

Why is UCT important?

Technology is an important part of our daily life.
UCT gives the user control over the technology.
Therefore UCT allows the user to be more in control of their life.

* UCT tools cannot be discontinued
* There are no usage fees that can change over time
* User has the ability to fix things that break (by learning to fix things themselves, or by hiring someone who knows).

Examples

* **http://www.gnu.org/software/ GNU software**
* **http://ronja.twibright.com Ronja**
* **http://sbc.twibright.com SBC**
* DIY recipes that are conceived as production/stable or mature

How to exploit UCT economically?

* Manufacture Printed Circuit Boards (PCB) in large quantity and sell them
* Manufacture modules for UCT and sell them
* Manufacture UCT devices as a DIY-kit
* Manufacture UCT devices and sell them as complete
* Operate a public workshop (example: **http://www.dynamo.ch**) and encourage people to take the opportunity to make their own UCT device there.

How to make technology be UCT?

* Publish all sources, guides and development documentation under a licence permitting redistribution in modified or unmodified form
* Use only free-software tools during development
* Do not use tools that require the user to pay for licenses indirectly (like a free software program written for a proprietary operating system)

How can we define the practises of UCT?

Portability

Not only the device, but also its interface and *the manufacturing process and technology itself* must be portable.

The device must be usable without unnecessary third party proprietary gadgets. It must be possible to build at home with rudimentary tools. When enough public interest comes about, it is appropriate to take additional measures to facilitate manufacture on a bigger scale.

Also the development must be possible to carry out portably. It means no proprietary tools should be used. The sources should be published under a licence like the GNU Public License (GPL) or GNU Free Documentation License (GFDL). Any user should be able to edit the technology sources without investing any money for any licences.

Scalability

To bring maximum benefit to the user, the user isn't expected to spend half their life determining what to do with the design. The usage of the design must be scalable, the design must be routinely usable as a part in whole systems of much higher complexity.

A comprehensible and comprehensive guide with instructions written in human language code is therefore necessary. This way the design can be quickly deployed and treated as a module in higher-level constructions.

For example you can take couple machines, install the UCT operating system GNU/Linux, build a couple of UCT optical datalinks and deploy a free

network without becoming an expert either in Linux or in Ronja.

If the design isn't scalable in this sense, the user is deprived of his freedom to use the device as part of a more complex system.

Scalability of development

Not only the use of a User Controlled Technology, but also the development of it, must be scalable. Therefore it must not be a problem for large number of people to be involved in the development. It is not possible for everyone to reverse-engineer the source of a technology, because this would be ineffective and such development unscalable. The development couldn't exceed the capability of the single developer that created it.

A development documentation must be created and released. As free software requires, the source must be provided in a form most fit for development. If source code with development documentation is more fit than one

without, it must be provided. This requirement is consistent with the free software paradigm.

Support

User Controlled Technology exploits developer-user interaction for achieving improvement. A support mechanism should be set up that allows users to quickly and easily report bugs in the design and ambiguities in the building guide; at least a discussion list and bug tracker system.

Reliability

When complex systems are built from individual components, the reliability of the system goes down exponentially with number of layers. Therefore it is necessary that the individual components be as reliable as possible, not only in their usage, but also in their manufacture. Therefore, BugFree(TM) must be a holy grail of any UCT developer. Cutting corners will lead the design to be treated as a toy and not as a mature technology capable of "production deployment".

Also environmental issues should be taken into account.

Examples:

* Instead of using custom specialized proprietary chips, whose manufacturer can exert control over the user, orientation towards general purpose or programmable chips is better
* Instead of using machined cast aluminium housing which can't be made at home and requires a large workshop and foundry, a smoke pipe can be used
* Instead of solvent-based paints which raise environmental questions, water-soluble equivalents are used
* Instead of relying on fast hardware, the operating system (e. g. Linux) is written so that it will also run on an old 486.

Licensing

* The license should not forbid immediate manufacture in uncontrolled quantity. I don't consider licenses like "maximum 3 pieces for personal use" or "commercial exploitation prohibited" free technology. Like GPL and GFDL: licenses like this don't prohibit commercial use of free software.

Free Software

I consider free software to be UCT instantiated in the field of software.

• Author : Armin Medosch, London/Vienna July - Dec 2005

• Meshing in the Future - The free configuration of everything and everyone with Hive Networks

*[Note: Words or acronyms marked with an * are explained in a glossary appended to this text.]*

1.Introduction

One day in spring 2005 I popped over to my friend Adam's. In his tiny living room, which also serves as the headquarters for free2air **http://www.free2air.org**, I found another friend, Alexei, hunched over a small technical device. Its case had been removed and the circuitry of the board and the chips could be seen. It had a small hard drive strapped to the back of the main board. Alexei and Adam were trying to make the thing boot from the hard drive. They were so focused that I barely managed to get noticed when I said hello. Slightly daunting technical buzzwords such as 'cross compilation', and 'zeroconf' were flying through the room. Not all of this meant something to me at the time but what I could figure out was that they were on to something special. This little thing on the table represented the seed of an idea much larger than its petite techno-crab like self.

Over the last two decades free/libre and open source software (FLOSS)* has provided accessible means for people to write their own software, encompassing creative, educational and professional uses. In the meantime, IP (Intellectual Property)* regulations have become a battleground. While the proprietary monopolies marshal an army of lawyers and policymakers to fight their 'battle', the FLOSS communities have responded by creating realities on the ground. In a quite distinct manner, ever more areas of computing have become 'free'. The FLOSS universe is an expansionary one.

It has been very interesting to watch how the free software and open source software communities have creatively made their 'investment'. While some FLOSS projects are supported by companies and universities, many projects remain outside such institutional context. There is no formal structure to decide which projects are taken on. Many free software projects exist only because developers make a personal commitment to them. Thus, the investment is a highly personal one. The communities have nevertheless been able to make wise decisions expanding on existing building blocks. First, the tools to build tools were released from the corporate lockers. Then, the PC was liberated by being given a range of free operating systems. On top of that the internet boom of the nineties has been built, with most of the services and applications such as email and web servers powered by FLOSS. What is happening now is that the same versatility of the universally programmable machine is needed in smaller devices, in those digital

technologies which pervade our environments anyway, from the car to the mobile phone, palm computer or home entertainment system. In industry terms this is called ubiquitous or pervasive computing.

Salesmen-gurus like Nicolas Negroponte have been telling us about the merits of 'being digital' (Negroponte 1995) for two decades now, which implies that computer chips need to be 'embedded' in the environment. What usually gets left out of the marketing is that the world of embedded computing* is also the world of embedded capitalism, where everything is done by large corporations whose systems are by default more secretive than the mafia. The chips which are used in embedded systems are different from the chips used in PCs. For developers to be able to make use of those chips it was necessary to buy very expensive licenses or to engage in time consuming and difficult reverse engineering. This provided huge obstacles for 'free' developments in this area. Assuming there was once a well meaning vision by computer engineers of 'augmenting' reality with smart devices, this dream may long have been highjacked by corporate ambitions to sell more hardware. At best it promised 'intelligent' homes where fridges and toasters would all communicate with each other; at worst clouds of smart dust* would conduct the remote controlled warfare of the 21st century. Technology, in those 'visions', is meant to strap people into a regime of consumption and control.

'Embedded capitalism' also means that those developments are driven by an industrial logic of higher volumes of cheaper goods sold at lower margins. In the digital world this is often euphemistically referred to as Moore's Law*. The mundane economic aspect behind the spectacular growth of processor speed and memory capacity is the need of producing and selling chips in very large numbers to make a profit, because the initial investment costs are very high. This logic has – maybe oddly enough – benefited the FLOSS community by giving it cheaper toys to play with. What is happening now is that embedded computing gets 'liberated'. The name of the game is to replace the firmware* of small devices – from wireless routers to palms to practically anything that beeps – with trimmed down Linux* distributions*. Once the operating systems of those devices have been replaced with free ones, their functionality can be rewritten to perform other types of services. Embedded computing becomes transparent and may, eventually, reflect the needs of ordinary people instead of shareholders.

Enter the HIVE Networks **http://www.hivenetworks.net/** project. Devised by Raylab **http://www.raylab.com** and affiliates, I had witnessed the

development of this project in its very early days during that first magic afternoon. Hive Networks was initiated by Alexei Blinov, Vladimir Grafov and Ciron Edwards of Raylab, supported by other developers such as Bruce Simpson, Adam Burns and a growing network of non-techie supporters such as Ilze Black, James Stevens, myself and others. Raylab brings a particular experience to the project. Blinov and Grafov, both originally from Russia, have been working as artist/engineers (or engineer/artists) for many years now, often technically supporting the work of artists such as Eric Hobijn and Atau Tanaka. After his move to London Blinov worked with the group Audiorom. Their interactive sound art works won the BAFTA Interactive Award, and Blinov's electronics skills played no small part. More recently, with Take2030, Blinov helped to create the Lunchboxes. Those boxes, whose cases consist of typical Japanese Bento boxes, contain a fully functional miniature computer running Meshlinux as an operating system. They are capable of connecting to each other and other computers via WLAN* on the fly by using the OSLR* **http://www.olsr.org/** dynamic routing protocol. In many ways the Take2030 lunchboxes have been an important step towards Hive Networks.

Finding solutions for those art projects usually involved a lot of tinkering and risky actions with the soldering iron. Another important background influence was the involvement with London's nascent free network* movement which – under the banner of Consume **http://consume.net** – in the early 2000s highlighted the possibility that people can create their own networking infrastructure by using WLAN technology of the 802.11 standard family and in the 2.4 GHz spectrum (cf. Medosch 2004). In those early days, old computers were often fitted with Linux, then used and repurposed as wireless access points (AP)* and routers*. But an old computer is still an old computer, which implies that it has many ways of breaking down. As Blinov pointed out in conversation, with Hive Networks the days of the soldering iron and of crappy old computers are over.

For Raylab and affiliates, the goal is now to work with state of the art hardware which is produced in industrial quantities and whose design follows widely established industry standards. Usually these devices use solid state computing that have no moving parts which could mechanically break and fail. Liberating or repurposing such devices signals nothing less than a paradigm change in creative computing. This time it is not the artists asking technicians for a creative solution, it is the engineer/artists who are proposing a framework for which artists and other media practitioners are asked to come up with project ideas. Hive Networks transcends the boundaries between engineering and art. It is a work of art as well as a

platform for other artists to create works. Most importantly, it combines the element of content with the element of networking.

Each Hive device is capable of gathering content (through webcams, microphones, sensors) and disseminating it (web server, audio/video live streams, bluetooth*, WLAN). At the same time each Hive device also acts as a node in the network, which means that it is capable of storing and forwarding data. The conjunction of those two elements means that the perception of the network as such changes. The network is no longer only a connectivity structure through which access to the global internet is facilitated, but it becomes a content structure, a hiving network of desires and cultural creations. An additional motivation is the urgency to open up the world of embedded computing and make it available to the highest possible number of people. So much for the concept, now to the realization.

2. From OpenEmbedded to HiveWares

FLOSS developers have found ways of replacing company firmware with custom Linux firmware on a number of devices now, specifically product families by Linksys, Netgear, Asus and others. The meta-tool Open Embedded and distributions like OpenWrt make it easier to open those gadgets and install applications customized to individual needs. With Hivewares Raylab adds a particular flavour to the orchestra of voices. What is now only possible for serious geeks should become part of everyone's lifeworld.

One of the first items to draw the attention of the community was the Linksys WRT 54G, a broadband router and wireless access point. Harald Welte is a Linux kernel developer from Berlin who is deeply involved with the Iptables/Netfilter project which adds security features. Welte had discovered that a number of companies who sold WLAN equipment had based their firmware on Linux. As Linux is protected by the GPL*, the terms of this licence make it mandatory to release the source code* of any software based on it. Companies such as Linksys, Sitecom and Fujitsu-Siemens who sold their Linux-based WLAN devices had for one reason or another 'forgotten' to make the source code accessible. The Free Software Foundation (FSF), who is actually safeguarding the GPL, had traditionally been reluctant to take violators to court. But Welte sought the help of lawyers and started GPL-violations.org, a project which sent legally backed warning letters to GPL violators. Welte's initiative succeeded also in court, in a landmark case in Germany against the company Sitecom. Subsequently it became clear that the GPL was more than a well meaning declaration of intent and that it

really was a legally binding licence agreement. Industry giants such as Fujitsu-Siemens settled out of court and complied with their obligation to release the source code. Linksys, confronted with similar allegations, slowly and reluctantly released the source code of the WRT 54G. This opened the floodgate for a range of firmware hacking projects.

Replacing the firmware of a device such as the WRT 54G with Linux-based firmware is of great advantage. Not only does the way of working of the device become transparent, it also unleashes the full spectrum of its capabilities. Usually manufacturers restrict the functionality of devices to what they think that consumers need. And specifically in the low cost or 'consumer' market there seems to be an assumption that people would not want to or should not have the ability to tinker. By replacing the firmware a device which was meant to be a relatively stupid AP only could become a web-server or a hub for internet telephony (Voice over IP* or VOIP) – in other words, anything that anyone might possibly imagine it to become within the limits of existing technological development.

The legal hacking of the WRT 54G brought the OpenWrt project **http://openwrt.org/** to life and aimed at facilitating the making of custom firmware. OpenWrt is a Linux distribution for a range of wireless routers. It provides only a minimal firmware – just what is necessary to boot the device and provide its most basic functionalities. Its key feature is that it allows users to add and manage packages*. Users can custom tune their AP, they can remove unwanted packages and add packages they like. Developers don't have to deal with the intricacies of the hardware to create a whole firmware of their own but can focus on developing useful packages instead.

Highly skilled developers from the free network community have put OpenWrt to good use. For most ordinary humans OpenWrt is still quite a scary bit of software which can only be controlled via the command line interface. Sven Ola Tuecke from the c-base and Freifunk **http://www.freifunk.de** community in Berlin has put together the Freifunk Firmware. It is based on OpenWrt but offers a web-like interface for customization and administration so that less skilled users can also make a proper free network node. Elektra, another Berlin based network wizard, has worked on improvements of OLSR and its inclusion in the Freifunk Firmware. Now dozens of nodes and hubs on the roofs of Berlin create an elegant mesh network which largely maintains itself and shovels around bits and bytes outside the networks of corporate greed and state surveillance.

Naturally, the WRT 54G did not stay the only liberated hardware device. Under the banner of OpenEmbedded **http://oe.handhelds.org/** there is a

development under way to make it easier to "bake" custom Linux kernels for potentially a very large number of devices. A hairy issue on any PC under Linux is the compilation of source code to make it work with a specific hardware. With embedded devices the added difficulty is that the source code needs to be compiled on another platform first and then installed on the device. This is called cross-compilation and is one of the most difficult areas in contemporary computing. OpenEmbedded has created a tool named BitBake to make cross-compilation work. The project is in its early stages and follows an almost utopian meta-level strategy, but some branches already show signs of success. Out of the original OpenEmbedded effort came the OpenSlug **http://www.nslu2 linux.org/wiki/OpenSlug/HomePage** development which tries to make a truly open source custom kernel (kernel 2.6) for the NSLU2 (Netgear Network Storage Link Usb 2). The NSLU2 is particularly interesting because it works with an external HD and it can be made to run on batteries. You can have a web-server on a wireless battery driven device. People could make mesh mobile networks and do VOIP – internet telephony – completely for free on their own community network.

3. Hivewares: The Self-Managed People's Net

Blinov and Grafov watched those developments carefully and decided to work with another product family, the WL series by Asus. Custom firmware development for those devices is supported by a lively community called the WL500g Forum **http://wl500g.info/** which basically thrives around "Oleg's firmware".

Oleg is a Russian guy who rewrote Asus firmware for the WL-series of products (WL500g, WL300G, WL-HDD) and added lots of useful stuff to it, including the possibility to use the root filesystem from an external drive (either USB flash or IDE, in case of WL-HDD). (Grafov 2005)

Blinov and Grafov have put Oleg's Firmware on the WL-HDD2.5. This little box which I had seen first during that magic afternoon is now available for around 50GBP. Like the WRT 54G it supports both WLAN and ethernet connections on top of which it also offers an IDE connection and USB 1.1. Both IDE and USB allow the connection of an external HD which is crucial for expanding the capacity and adding features. Raylab spent quite a few afternoons making the WL-HDD boot from an external drive and adding a few other essential functions.

What we did is that we used his [Oleg's] firmware with its built-in possibility of adding packages as basis and added some features that make it possible to run Hivewares. Hivewares are self-contained "product personalities" that make sense to a non-geek person. Without

Hivewares, a non-techie could probably still get the same functionality from his/her box, but only after a lot of painful seeking through many different sources of information and forum postings. (Grafov 2005)

After an initial project presentation at the media art lab in Graz, at WSFII prepconf 05 Raylab were able to show such Hivewares in action, by presenting a WL HDD and a number of different pre-packaged configurations on Compact Flash drives. By replacing the Compact Flash card the primary function of the device is changed, it could either be a web server or a web cam, a net radio player/receiver or a wireless media jukebox. They have also been conducting experiments with the WL 500Gx which is very similar to WL-HDD but even better equipped with plugs connecting it to the outside world. With Hiveware the little Asus boxes become freely configurable devices. A number of Hivewares are already downloadable from the Wiki.

The Hiveware developers put particular attention to a concept known as Zeroconf, called Bonjour in the Apple world.

Addition of Bonjour and linking of Hivewares personality to service advertisement supported by it, made it possible to have hassle-free discovery of Hive devices in the neighbourhood of supported clients (Windows and Mac running Zeroconf client software). (Grafov 2005)

By including Zeroconf/Howl, Raylab hope to overcome the carrier/content dichotomy. The network becomes more than just a carrier medium, it also identifies and advertises ‘services’ in the vicinity or network-neighbourhood of a node. People are no longer getting access to an anonymous world wide web but connect to content and services which reflect their (local) interests. Last not least Raylab are experimenting with further interfaces such as bluetooth, FM radio and a break-out box, which has analogue-digital switches, so that sensors, for instance, can be connected to a box. Participants in the Hive Network could potentially have their own meteorological environmental station.

In summary, what Raylab have been trying to do is to make the process they were going through last year over a period of several months as hassle-free as possible for other users. Alexei Blinov wants to make “information processing truly accessible without usurping human space”. “Just like bees and ants and other social insects”, Blinov says, “those devices are living in symbiosis with people rather than presenting problems that demand a lot of dedication to find solutions”. (Blinov 2005)

Ideally they would like to offer the customization of devices on a web platform. Users first need to buy the hardware, a common device available through many stores such as the WL-HDD. Then they come to the web-site, where they can choose how to configure their Hive device by

clicking radio buttons on a web form. Once finished with this, a specific version of the software is compiled. Users download the compiled software and install it and are ready to fire up their Hive device and join the network. For accomplished Linux users this is already possible.

In the interests of minimising the obstacles for users at every level of expertise, Bruce Simpson, BSD developer and friend of Raylab, has experimented with OpenEmbedded and BitBaking. As OpenEmbedded is still in an experimental stage, there is some way to go. Currently it is only advisable for people with some knowledge of Linux/Unix to get hands-on involved. For those a Hiveware compilation is envisioned which consists of a Linux image with a built-in packaging system (ipkg), Zeroconf (Rendevouz/Bonjour) service advertisement and discovery protocol, the standard Linux command line toolkit (Busybox) and a PHP-based web interface. Thus, more accomplished users who know some PHP and Javascript are able of developing application interfaces without having to go into hardware hacking. As an example, Blinov recently strung together a nice interface which turns a WL-HDD into a net radio receiver, but any sort of other web application development is possible.

Because, after all, the chipsets inside the WL-HDD are not that powerful, what Raylab have in mind is that each device can do one thing very well, but one only. So for instance a WL-HDD can be turned either into a video streaming server, or an Internet radio tuner, or a music jukebox and Internet radio tuner in one, or an audio streaming server which converts audio input (line/mic in) to a live-stream on the net. It can not perform all those tasks at the same time but it can do each at a time. Because the individual devices are quite cheap, large numbers could be spread out over the cityscape to work together. What makes the Hive really buzz is not just the price but also the added network capacity. Raylab intend to make each device capable of joining ad-hoc networks*. Each device creates a wireless cloud of potential network connectivity around itself and seeks to link up automatically with other devices. The point is to make this really work automatically. If successful, a sort of Trojan Horse strategy could be played out. If a technophobe – an aged parent, for instance – can be persuaded to use a Hive device, which is as easy to use as a radio receiver or CD player, it will also potentially become part of a free network. If adoption of such devices is widespread, local free networks can connect together and large scale community owned wireless free networks finally become reality. What remains to be resolved is how exactly this is going to be made to work with Hivewares. As mentioned above, free network developers in Berlin and elsewhere have experimented very actively with ad-hoc mesh

networking* protocols such as OLSR. Those have been tried and tested now with 90 clients and more forming a mobile mesh network. It looks like Raylab is aiming at something similar and will include OLSR into its Hivewares. But the scalability of mesh networking up to areas of 1000 nodes and more remains to be proven.

There is a host of other potential points of criticism, and not just technical ones. The development of the free network community has shown that those projects make only slow progress in areas which are covered by affordable ADSL broadband offers from commercial Internet Service Providers (ISPs). The finer points of the political difference between commercial centrally controlled networks and community networks just do not seem to matter for the majority of people. The thrill of becoming a content provider on the community network is felt most strongly by the younger and more net savvy ones. The free network community has also focused so far mainly on making the networks work and cared little for the content. There remains a pronounced gender gap in the demography of such groups. Those issues are known to be difficult to overcome. Even if Hive developers solve all the technical problems we will have to wait and see if Hive devices will be adopted by large numbers and a diverse range of people.

4. Conclusions

There remains the potential criticism that Hive devices add only to the flood of digital gadgets which already threaten to become an environmental hazard, as SF author Bruce Sterling pointed out at his Siggraph key note speech in 2004. This could be countered by the claim that Hive devices will be the last gadget that anyone will ever need because one and the same piece of hardware can serve different purposes. Ideally, new functions can easily be downloaded and installed with a one-click process. But isn't this the same sort of techno-utopianism which is a generic part of the marketing blurb of the ICT industry? Is there really a connection between the intrinsic properties of this or that technology and desirable forms of social change? Those are big questions which cannot be answered within the limits of this text. They are also real questions in that sense that they do not offer themselves to be answered by simple or reductive statements. However, it is significant that the Hive Networks project poses those questions in a new and intriguing way. Hive Networks may well fail as a techno-utopian project if it formulates its objectives on a generic and universal level. It has a much better chance to make any impact if the technological development gets embedded into the community and gets driven by the

situated knowledge of people to whose needs the project responds.

In ubiquitous computing it is usually the devices which get smarter and the people who remain stupid. So far the concept of 'pervasive' computing sounds like a threat to ordinary people: another layer of technology which remains unseen, little understood but potentially influencing and controlling the life of many. By merging the concepts of FLOSS, DIY and embedded computing, Raylab threaten to turn that trend around.

There can be no real conclusions with regard of Hive Networks at this point. The project has made some achievements but is still in its early stages. After initial good responses from different sides – artists, developers, institutions – it appears that the developer community needs to grow to take it to the next level. It would be good to see some exemplary projects get off the ground to illustrate the concept. To this end, Hive developers are about to launch a number of collaborations with artists and media art institutions in Britain and abroad. The public needs to see what happens if swarms of Hive devices are set free. Otherwise the concept remains too abstract for most people.

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.glossary

Access point (AP) - a device which allows a WLAN client – for instance a notebook with a WLAN interface card – to connect to the AP and the internet. Such a set-up is also called a hotspot.

Ad-hoc network - a network which uses mesh network technology (see mesh networks). WLAN technology uses also a so called ad-hoc mode, which is a specific way of configuring an AP or wireless network card.

Black box - a device whose inner working stays hidden to the user.

Bluetooth - is a network technology which works at very close range.

Boot - a process by which a computer is 'bootstrapping' itself, starting up the system and checking its main system devices.

BSD - Berkeley System Distribution, first released in 1977 by Bill Joy. At Berkeley University and other

campuses students and post-graduates worked on improvements of the AT&T operating system Unix. Most significant contributions were the inclusion of the Internet Protocols (IP) in Unix and the BSD licence. Besides Linux, BSD is another stream of how a version of Unix became 'free'. Since the closure of the research group at Berkeley, University of California, BSD lives on through the three follow-up projects NetBSD, FreeBSD and OpenBSD.

Embedded computing - describes a type of device where hardware and software form a very close unity. It is used primarily in large industrial systems such as traffic systems or power plants, but also in consumer communication devices which present themselves as a black box.

Firmware - is the software which comes pre-installed with consumer devices; it contains a software which is specifically written for the type of hardware it runs on.

FLOSS - stands for Free Libre Open Source Software. The inclusion of 'Libre' signals that the word free is used as in 'freedom' and not as in gratis.

Free Network - a computer network which is neither owned by the state nor by a commercial company but by the people who create, maintain and use it.

GNU - stands for GNU is not Unix, the sort of joke programmers like to make who are used to recursive structures. The GNU tools and libraries have been developed by Richard Stallman and the Free Software Foundation (FSF) since the early 1980s. GNU made possible the development of Linux. The licence which protects GNU software, the GNU General Public Licence, has since been widely adopted and is the pillar of FLOSS development.

GPL - General Public Licence. The 'free' in free software is safeguarded by a specific software licence, the General Public Licence (GPL) which is maintained by the Free Software Foundation (cf. FSF 2006). The legal and normative basis of FLOSS are enshrined as four freedoms in the GPL. These are: freedom to use a work, freedom to change it, freedom to distribute exact copies of it and freedom to distribute adapted copies. These freedoms are made practicable through the obligation to provide the necessary resources – for software, this is the human-readable source code.

IP as in Internet Protocol - short form for a family of internet protocols at the core of which is TCP/IP, the protocols on the network layer which facilitate the receiving and sending of 'packets' of information. Other internet protocols are for instance SMTP (for email) and HTTP (for web). The technical details of IPs are documented in Requests For Comments (RFCs) which are stored publicly on the net **http://www.rfc-editor.org/**.

IP as in Intellectual Property - is corporate language to describe intangible goods. The term is controversial because it implies that all fruits of intellectual and creative labour are commodities.

LAN - Local Area Network, a cluster of computers connected locally. One of the most widely used LAN technologies is Ethernet, invented by Bob Metcalfe.

LINUX - is an operating system which is very similar to Unix. It has been created by Linus Torvalds using the GNU libraries and tools which is why some insist it always should be called GNU/Linux.

Linux distribution - a specific version of the basic Linux operating system plus additional packages. Distributions are compiled for a number of reasons and often to make particular tasks easier or to make Linux run on specific hardware.

Meshlinux - is a variation of the free operating system GNU/Linux which supports mesh networking.

Mesh networks - are highly distributed networks which use special routing technology. In standard routing

technology as used to send and receive information via the internet the 'routes' which data packets take are fixed. In mesh networks the software decides 'dynamically' or 'ad-hoc' which route data packets take. Sometimes 'mesh networking' and 'ad-hoc networking' are used as synonyms. In wireless and mobile networks mesh networking has the obvious advantage that the software adapts dynamically to changes in the structure or 'topology' of the network. There are a number of routing protocols which support mesh networking amongst which OLSR is one of the most advanced and most widely used ones.

Moore's Law - a prediction by a former IBM director that the speed of computer chips of the same price would double every 18 months. There is no 'law' behind this formula in any scientific sense but so far the prediction has held or been surpassed.

Node - a computer which is fully integrated in two way communication on the internet and is not just an end-point or 'leave'. In free network terminology a node usually combines the functionality of a router and an AP.

OLSR - Optimized Link State Protocol, a routing protocol for mobile mesh networks.

Packages - are programmes in Linux-speak, for instance services or applications.

Packet - to send and receive information on the internet, it is split up in so called packets, whereby a single packet is also called a frame.

RFC - Requests For Comments (RFCs), a set of technical and organisational notes on the Internet Protocols stored publicly on the net **http://www.rfc-editor.org/**.

Router - a computer which transfers packets of data between networks (routing). The decision where to send packets is based on entries in routing tables which reflect knowledge of the structure of the networks involved. In mesh networks the routing tables are not fixed but updated frequently by an automatic process.

PHP - scripting language which is widely used for interactive web applications.

Radio buttons - buttons on a web form which can be clicked either on or off.

Router - a computer on the net which send and receives packets of data on the net.

Smart dust - is an experimental technology developed by contractors of the Pentagon where very small devices gather information and communicate.

Source Code - is the human readable form of computer code rather than just the machine-readable binaries, consisting of nothing than one and zeros. Source code needs to be compiled in order to run on a machine. Vendors of proprietary software do not give out the source code so that the functions of a programme can neither be checked nor changed.

Trojan Horse - appropriation of the ancient Greek saga to the computer world; usually means a software which hides its true purpose and is installed by users without knowing. Sometimes used for malicious reasons such as spreading computer viruses or forwarding personal information through a 'back door' in a computer.

WLAN - is the acronym for Wireless Local Area Network and is called WiFi in marketing language. It is based on a family of standards by the IEEE which all start with the numbers 802.11 (a, b, c, etc.). The technology operates in a band of the electromagnetic spectrum which according to international conventions has been made licence exempt, which means that everybody can use it without having to ask for permission first. One of the licence exempt spectrum bands is at and above 2.4 GHz.

• Author : Palle Torsson and Rasmus Fleischer

• The Grey Commons - strategic considerations in the copyfight

Speech transcript to 22C3. Berlin. December 2005

[Palle Torsson]

Introduction: We are the many shades of the Grey commons

When DJ Danger Mouse took the vocals from Jay-Z's *The Black Album* and remixed it with the Beatles' *White Album* to create *The Grey Album*, he was breaking the copyright law – he was climbing up on the shoulders of giants.

The success of the work would never have been possible without file-sharing. Mash-up culture exists by obtaining, downloading, remixing and uploading files for redistribution. Sometimes this work escapes the claws of the copyright owners – a claw that is stretching to bring us back in time to before the internet, computers and file-sharing.

But we will continue to protest against restrictions on file-sharing by making file-sharing better.

The remix has always been here, in the way we as beings become; splitting, mapping and absorbing the world with our minds. When computers made a similar splitting possible by storing and processing information, a breakdown of the mass medial dichotomies began, the computer taking this property with its most basic functions of copying and remixing.

It is vital to acknowledge that we are confronted with intellectual property considerations every day, from kids playing with pokemon to yoga masters. This is something that has become part of our life in the most concrete way because of the possibilities of the universal machine, the computer.

It is not a grey commons in terms of the law but as possibility, as technology and technique. It is not optional but inscribed in the technique we use every day. The grey is not here exactly by an effort but rather as the shortest way to make life work with technology. The shading, the tuning and twisting is omnipresent; it is not something you can wish away.

What this really is about is our conditions of living, how information is used, transferred and owned in society.

As humans, creators, amateurs or fans, in a desire for pleasure and in a chain of small habits we make the world appear.

On a personal level we all have stories that describe this experience. With the remix as the norm, steps to a democratization of creativity are taken and in the process we are liberating the myth of a special class of artists isolated from the rest of us fans, amateurs or consumers.

[Rasmus Fleischer]

Short descriptions of The Pirate Bay, Piratbyrån and Piratgruppen

The Pirate Bay is the file-sharing Bit Torrent tracker website based in Sweden and has become the most popular Bit Torrent site in the world and now receives more daily hits than CNN. Piratbyrån (The Pirate Association or Bureau of Piracy) in Sweden and Piratgruppen (The Pirate Group) in Denmark are sister organizations that promote information piracy and supports the culture through discussions, event, media advocacy, advice and develop questions about Intellectual Property and file-sharing.

Piratbyrån was born in late summer 2003, from an integrated internet radio broadcast community and IRC channel populated by the Swedish hacker community and demo-sceners. Piratbyrån was initiated to support the free copying of culture and has today evolved into a think-tank, running a community and a Swedish information site with news, forums, articles, guides, a shop and over 50,000 members to date.

Piratbyrån also in November 2003 launched the Bit Torrent tracker and website: The Pirate Bay. No one expected to see it growing to be the biggest tracker in the world, but as it grew very fast it was natural to branch it off and let PB and TPB exist as different but related entities.

The Pirate Bay has recently gone through a major internationalization and can now be browsed in languages from Mandarin to Icelandic and is now, more then ever, the leading Bit Torrent tracker in the world. Financially, it is relying on donations on the one hand, and advertising banners on the other. All the money has gone into buying more hardware for the server hall, located in Gothenburg. Presently The Pirate Bay crew is planning to, in coordination with all the other major Bit Torrent trackers globally, start evolving the next generation's Bit Torrent protocol.

This summer Piratbyrån also released *Copy Me*, a pocket book about file-sharing culture and the copyfight. In a couple of months it sold 2,000 hard copies, whilst also being available for free download.

A pro-piracy axis of the North...

When the Danish equivalent Piratgruppen.org was founded in 2004, one year after Piratbyrån, it caused an even greater response. The Association of Danish Music Journalists nominated Piratgruppen for their "Idea of the Year" award. The reaction of the copyright industry was hysterical, and the Trade Union Confederation in Denmark withdrew their sponsorship for the prize award. Then an interesting thing happened – the Roskilde Festival came in as a new sponsor – in explicit solidarity with the pirates, demonstrating that all parts of the music business do not

sympathize with the record industry's anti-piracy stance. At the same time the whole controversy gave the new Danish Piratgruppen a great deal of attention.

As the prosecution of individual file-sharers had started earlier in Denmark than in Sweden, one of their first actions was to set up a fund for juridical support. The aim is said to protect and expand this grey zone. A similar fund is now about to be established in Sweden too, as the anti-piracy persecutions have started here also.

Another project of the Danish Piratgruppen is the project Vidensdeling.nu, where students are encouraged to digitize and share the expensive books on their reading lists, creating a digital library. So far the campaign has resulted in books being shared on The Pirate Bay, while the publishing companies have joined the entertainment industry in their desperate hunt for file sharers.

After Denmark, this year it was Norway's turn to follow suit and start its own initiative. And Finland are now on their way, further consolidating the northern pro-piracy-axis…we are of course always interested in establishing contact with allies in other countries.

[Palle Torsson]

A tale of an artist living under the current copyright regime

I would like to say something about where my involvement with Piratbyrån comes from, since it describes a personal experience of what life is like under the current copyright regime.

I have been involved with Piratbyrån for over a year now. We met at a party for the best Swedish web sites and since we had many aspirations in common we decided to make some kind of collaboration.

I wanted to engage in Piratbyrån because it is the best way for me to oppose the current copyright regime and basically make a link to the redistribution of culture, which I find to be a key element in bringing about a more liveable world.

In 1995 I started the project Museum Meltdown in collaboration with another artist, Tobias Bernstrup. The work consisted of a series of site-specific computer game installations in European art museums. Since then I have continued to work on projects based on computer games. The latest project *Evil Interiors* uses reconstructions from movies such as *Psycho*, *Reservoir Dogs* and *Scarface*.

I love the power and potential of the open file together with the information structure of the computer game community, where files are shared amongst kids for the benefit and evolution of playing, which basically

comes from the same mentality of sharing that generated game culture. This experience is essential tp the way I look at the possibilities of the digital culture today.

Another key experience that led to the involvement with Piratbyrån was born in 2000 when I made a video that was censored and stopped on copyright grounds. The video *Pippi Examples* consisted of short sequences in slow motion from the *Pippi Longstocking* films made around 1970. The copyright holders SF (Swedish Film Industry) disapproved of the video and after a national debate, a settlement was made and all the copies of *Pippi Examples* were destroyed.

I came to understand that I had to fight for my freedom of speech and that I could no longer only rely on my identity as an artist to be able to do what I do.

My work with Piratbyrån is one way for me to map out and understand the relation and powers involved with production of art in society, and finding a power that opposes the current copyright regime.

In my work I always appropriate, borrow or steal other people's work to make something new. I live in, distribute with and take from the circulation of information. The configurations of the media structures are my workspace. The motivation for my work is to try to intervene in this structure to expand the grey zone.

Now I am running the project **http://www.artliberated.org** about art, censorship and intellectual property, with Piratbyrån. The idea of this site is to understand, map out and help artistic appropriation, to collect cases of censorship in one site, and to contextualize the works that otherwise would be fading away as anomalies. I believe, contrary to common opinion, that we should have a basic right to take from whatever passes us in the stream of media, and that this is essential for the cultural existence of the information age, because we are the function that makes this circulation possible. This is not a right that can be restricted. Instead this is the way one survives inside this pit.

[Rasmus Fleischer]

The Bahnhof raid

Things escalated in March, when Sweden's anti-piracy lobby organization – Antipiratbyrån – managed to arrange a raid at a Swedish ISP alleged to host unlicensed material. The raid was conducted in an unlawful manner and it was discovered that the anti-piracy lobby had in fact paid an infiltrator for several months to upload copyright-protected material and place hardware at the ISP. This got public when a group called

Angry Young Hackers hacked their webpage and mail, exposing their mail conversations about the infiltration, held with their American bosses. All this spawned a public outcry and the lawyer and spokesperson for APB Henrik Pontén received thousands of hate-SMS, including death threats, from a lot of angry kids.

Many other people started to realize that the war against file-sharing also has wide-ranging consequences for the internet freedom and business freedom in general, and the opposition against the copyright industry has broadened a lot. One important consequence is that a lot of right-wing libertarians in Sweden have turned into defenders of file-sharing, and the libertarian critique of intellectual property has experienced an upswing. There are people on both sides of the traditional political spectrum sympathizing with Piratbyrån, but all the political parties in general officially are of course anti-piracy, with the ruling social democrats representing the most extreme policies in this regard.

Yellow brigades

A very bizarre and funny thing with this raid against the ISP Bahnhof, is that the Motion Pictures Association of America obviously was about to intentionally spread a lie about terrorist connections. They sent out an international press release about the raid, and if you select "Trace changes" in Microsoft Word, there were statements claiming that Swedish authorities had found a link between the suspected release group and a terrorist group known as the "Yellow Brigades". Well, that *was* in fact the name of a group of German elite soldiers fighting for Sweden in the Thirty Year's War, most of them killed in the battle of Lützen in 1632. No one has heard of them since then, until the movie industry started to hunt them in a Swedish server hall in 2005. If they could channel *that* kind of phantasm into making better movies, I'm pretty sure they would not have to worry about piracy any more… :)

[Palle Torsson]

The first of May demonstration

After this hot spring, at the first of May it was time for all internet lovers, file-sharers and pirates to gather in Stockholm. Piratbyrån's celebration in a central park featured music and three speakers talking about creativity and the transgression of copyright law. A hand-to-hand copy-swap was expanded to a coffin where you could place and share CDs. The counter-filing of the anti-pirate organization APB was handed over to the police. A big crowd came, of something like 800 people with very

different background with banners, like “No Software Patents”, “Sharing is Caring” and “All Your Base [stations] Belong to Us”. The slogans of the demonstration were: “Copy me – we will continue to copy everything”, “Don’t touch our Internet” and “Welfare begins at 100 Mbit”.

The attitude

It is important to know that this aggressively humorous attitude is something that characterizes this pro-piracy movement we are presenting.

One internationally famous example is the letters written by The Pirate Bay in response to legal threats from the big companies like Microsoft, DreamWorks and Warner Bros.

For details see: **http://thepiratebay.org/legal.php**

[Rasmus Fleischer]

The Västerås case & The Evidence Machine

In Sweden, the first sentence against an individual file-sharer came a couple of months ago. Regarding these judgments against file-sharers, the courts have chosen to rely on screen dumps as evidence. Screen dumps submitted to the police by Antipiratbyrån themselves. It is of course very controversial to let private lobby groups representing the movie industry get that kind of control over jurisdiction.

Here, Piratbyrån demonstrated the madness by producing a piece of software, *The Evidence Machine*, letting anyone go to a site and produce fake evidence of file-sharing against anyone. The juridical dilemma is still not settled, but hopefully this kind of pedagogical tool can demonstrate what you are stepping into if you accept screen dumps as evidence.

Another issue in Sweden this year has been Antipiratbyrån’s habit of registering of IP addresses of suspected file-sharers. This habit was banned, as they had not applied for the special license which you must have under Swedish law. However, that was later turned around as they got dispense from the authorities. But it has in many ways been obvious to the public that the anti-piracy lobby is also operating in their own, very doubtful, legal grey zone.

But of course they are dependent on the existence of police officials willing to give priority to the hunting of file-sharers over real criminality. That raises very controversial ethical questions that of course should remain open. Most policemen really don’t have the will to hunt down kids, and when it is possible to identify the ones who do follow the anti-piracy lobby’s wishes, it is easy to point at the totally unreasonable costs for tax-payers for every victim of the anti-piracy-hunt.

The new Swedish copyright law, summer 2005

For a long time it was legal to download music for personal use in Sweden, while the uploading of copyrighted material was criminal. But since the 1st of July, the EU copyright directive has been implemented in Swedish law, meaning that downloading was also made illegal. However, while the anti-piracy lobby of course wants us to believe that it suddenly has become very dangerous to be a file-sharer, and many voices have spoken up against the supposed "mass-criminalization of teenagers", Piratbyrån has tried to present a more realistic picture.

Most file-sharers use Bit Torrent, where every downloader is also an uploader, and thus they were formally criminals also before this law, that didn't really seem to have changed anything.

Generally, it is important *not* to accept this talking about "downloading", as if it was some kind of activity completely separate from the uploading. We insist on talking about *file-sharing* as a *horizontal* activity.

The free sharing of culture has so many sides, so many grey zones and safe havens, that the anti-piracy-lobby can only attack a very small part at any time. Or, of course, they can attack free internet communications in general, as they are trying to do more and more right now. Rendering this dilemma visible is done when we give up talking about things in the copyright industry's universal terms, and instead shifts the focus to the diverse reality of cultural circulation: The Grey Commons.

[Palle Torsson]

The Grey Zoning

The "grey zone" also becomes visible if we focus attention on how arbitrary the very definition of "copying" is. How it is based upon outdated technical categories.

There is a tactical point in clarifying how it is getting harder to distinguish between local transfers of data, for example in wireless environments, and "file-sharing" between different systems. Clarifying that digital technology is built on copying, and that internet is built on file-sharing.

Copying is here already. The only thing copyright can do is to impose a *pseudo-moral* differentiation between so-called "normal" and "immoral" workings.

For the copyright industry, it is of extreme importance to keep people uninformed of the real workings of networked computers. They want to make an artificial distinction between "downloading" and "streaming", as equivalents to record distribution and radio broadcasting.

Our role here is to keep insisting on that the only difference lies in the software configuration on the receiving end. But copyright law will *never* be able to acknowledge that. It has to rely on fictions, on a kind of cognitive

mapping, where notions valid for traditional one-way mass media are forcefully applied to the internet. We call it *Mental Rights Management*.

[Rasmus Fleischer]

It is essential for the copyright industry to keep the majority of computer users trapped in believing that the "window" of their web browser is exactly a window through which they can look at information located elsewhere, under someone else's control. Our job here is about making clear that everything you see on your screen or hear through your speakers, is already under your control.

Zeros and ones have no taste, smell or colour – be they parts of pirated material or not – and therefore it is impossible to construct a computer that cannot reproduce and manipulate these zeros and ones - as such a machine would no longer be a computer, but something as grotesque as a digital simulation of the machines of the last century.

The historical background

But of course the aim of copyright is to do exactly that. Copyright was born in 18th century England in order to regulate the use of one specific machine, a machine that was expensive, few in numbers and that could write but not read, namely the printing press. Ever since, copyright laws have tried with varying success to make other machines imitate the characteristics of that one-way medium.

The concept was pretty easily adapted to the first technologies of sound and image recording, as gramophone and film entered around the turn of the last century.

But in the Seventies machines that could *both* read and write were spread to a wide population, like the Xerox paper copying machine, the audiocassette and video recorders. This transformed the production of culture, as well as the distribution. Remix, cut-up and mash-up cultures flourished, with early adopters like William S. Burroughs.

[Palle Torsson]

The industry started to claim that home taping was killing music. From the beginning they wanted to stop the technology altogether. However, the common compromise solution in Western Europe gave the introduction of a special tax on magnetic tapes, in order to compensate the copyright holders for a calculated loss of sales.

Since that time, the sampler, the CD-burner and portable memory devices has

continued to make the possibilities greater. Now we've got the combination of home computers, broadband, network protocols and compression algorithms that together define what we know as P2P file-sharing.

As we stand here today a fair question must be if a principle that was implemented for controlling printing presses in 18th century England should be determining our present.

Some people argue that like a great work of art, copyright has been standing the test of time. For us it is only a confirmation of how strong the basic function of information control is in a society and that as we depart from this control we are reaching further into the future.

[Rasmus Fleischer]

Compensation systems?

Some voices now call for a so-called "alternative compensation system", as a way to save *both* the copyright system *and* file-sharing. The idea usually is that a special fee should be imposed on every internet connection, so that a bureaucracy could channel the money to publishers and other rights holders.

It has been presented as a progressive alternative to mass criminalization, and is advocated by, amongst others, Lawrence Lessig, the EFF and here in Germany by the campaign Kulturflatrate, supported by Attac and CCC.

Just a week ago, it was reported that French parliamentarians had voted for a flatrate solution where downloading would be legalized. Many copyright reformists celebrated that as a victory and talked about "legalized P2P filesharing", which was totally misleading as uploading would be even more criminalized than before.

However, a rather extraordinary development during 2005 is that the anti-piracy organizations are starting to pick up the same kind of ideas. In Sweden, Antipiratbyrån has made numerous demands about the claimed "right" for so-called "content producers" to rob the ISPs of a part of their income.

A British ISP has gone into a joint venture with SonyBMG, offering its costumers the legal right to share the SonyBMG-controlled music, as long as they pay a flat rate – and accept that their file transfers are monitored and stopped if the filters detect transfers to people who not use the same ISP.

Cory Doctorow from the EFF did applaud this as a step in the right direction. We see this more as a clear example of internet sabotage and economical blackmail from an industry that can not accept to be pushed out by the future.

We have never been interested at all in so-called "alternative compensation

systems", as we generally find it based on a thinking totally grounded in pre-digital media, based on the principle of loss, and denies the complexity of circulation in networks.

Beyond the irrelevant consumer/producer-dichotomy

The copyright industry today likes to present the problem as if internet were just a way for so-called "consumers" to get so-called "content", and that we now just have "a reasonable distribution" of money between ISPs and content industry. But we must *never* fall in that trap, and can avoid it by refusing to talk about "content" altogether. Instead, we talk about internet as communication.

As clever entrepreneurs of course do understand, internet business is not about selling information, it is about selling the possibility to interact. In addition to file-sharing, people use their broadband connections to so many kinds of production, circulation and communication.

Therefore, it is totally wrong to regard our role as representing "consumer interests". On the contrary, it's all about leaving the artificial division of humanity into two groups of "producers" and "consumers".

But this is a division that is constantly upheld by the copyright economy. One example is how independent music producers are robbed of money by collecting societies like GEMA [STIM]. Licenses have to be paid for concerts, for storage media and for internet radio – money that goes to the officially recognized "producers" according to record sale statistics.

Another example regards the movie industry's bizarre lobbying to "plug the analogue hole", by introducing a law banning video equipment able to rip analogue media. The law proposal put forward by the MPAA mentions that so-called professional producers of course should have a license to use these video cards anyway. The effect would of course be an extreme consolidation of the split between producers and so-called users.

At the same time, it is important to understand the schizophrenic nature of industry. Companies like Microsoft and Sony are already totally dependent on what they call "user-generated content", as people are willing to pay for the possibility to exchange their own sounds and pictures via different communication channels.

Overcoming the split between producers and consumers is *not* some utopia of a world to come. The future is already here. The split is an abstraction that reinforces itself through the copyright economy at the same time as it is undermined by the internet's desiring-production.

[Palle Torsson]

A vital experiment of complexity

Maybe what is most important now is to bypass the urge for solutions, for victory in battles or for compromise and stability.

For example, talking about how to "compensate" copyright holders is to obscure the truth about the social production of culture, replacing it with the myth about copyright as some kind of "wage" for artists. And while some of the Creative Commons licenses can of course be usable, it would also be a trap to believe in that a "some rights reserved" approach would do anything to cool down the anomalies we are talking about.

On the contrary, trying to keep the "grey zone" as open and wide as possible will almost automatically produce better conditions for going beyond prevalent economic imperatives. Making general statements about THE alternative to copyright always brings the danger of strengthening copyright's universality claim.

We think that our projects have generally succeeded in escaping the most obvious re-territorializations, like explaining file-sharing just as a response to expensive records, and instead opened up new grey zones.

Make new links, make them alive and kicking. Let the body of file-sharing strategies become more unpredictable, and more elastic to the constant pressure.

The Pirate Bay is one example today, but we could also mention wonderful tools of other kinds, like Audioscrobbler that helps people conceptualizing their own relation to the circulation of music, outside the abstractions of the boring copyright mythology.

While intellectual property will continue to be a battleground for some of the major clamp-downs of our society, there will always be innumerable ways that are open.

Our approach has not very much to do with overcoming lack of access. Not even with opposition to dominant forms of culture.

The drive of discovering, thinking and inventing alternative processes of production is the affirmative power of life as a vital experiment of complexity. Internet piracy is all about desiring-production, and its deepest effects are beyond our human capacity to compute in the long run – just as Walter Benjamin talked about art as the production of desires that cannot be satisfied but will inevitably reach far beyond the goals originally impossible to imagine.

● Author : Jo Walsh

● A Spatial Data Infrastructure as big as the Internet that fits in your pocket.

What is a Spatial Data Infrastructure (SDI), and why would you want one that you can contribute to and, as a user of it, control?

An SDI is made up of geographic information (geodata). Geodata can be potentially any information that describes the location of something in physical space. Geodata can be literal images of spatial things – aerial photographs taken from specially rigged aeroplanes, or satellite imagery taken from 'earth observation' satellites. Geodata can be cartographic images that are designed to look like things in physical space, emphasising certain 'features' that are most useful to the intended user of the map – streetmaps for cities, or contour maps for exploring the countryside. Geodata can be your location as measured by the Global Positioning System (GPS); geodata can be your address; geodata can be any kind of information that has a “spatial component”.

A frequently repeated factoid is that 80 percent of information collected by government agencies has a spatial component. Governments need to collect a lot of geodata in order to do the work they currently do – collecting taxes on property, managing zoning and planning of land developments, managing their electoral registers, telling people where to go and vote, deciding whether people qualify for health and welfare services, and if so, how they can best go about getting them. Governments at every level need to collect and analyse a lot of geodata. Geodata even describes how government works, by drawing invisible political boundaries that determine how different people “represent” you in government, in a local council, or a city council or members of a national assembly of representatives.

Most countries have a “National Mapping Agency” (NMA) that collects and manages geodata on behalf of different government departments. The UK's Ordnance Survey is probably the world's oldest National Mapping Agency. The name “Ordnance” offers an insight into its history; it was set up to create maps for military defence purposes. Maps are the most powerful military technology there is. Now there is a new set of technologies for making digital maps, NMAs have decided they need a National, or even a European or Global, SDI for sharing geodata between different people and organisations.

Over the last 25 years, mapping techniques have been changed by computers unrecognisably. Satellites orbiting the Earth take pictures that can be as accurate as 1 metre per pixel – a metre of distance on Earth's surface corresponds to one little pixel dot on your screen. It's not hard to imagine a digital map of Earth that is the same size as it, stored on a computer network, visible one small piece at a time. Other networks of satellites let you find your position on Earth's surface to around 5 metres of accuracy

with a GPS device. There are other ways to find your position by listening to signals from different Earthbound radio transmitters whose locations you know. With a location sensing technology connected to a wireless communications device – like a mobile phone or a laptop – you can find a lot of instant information about where you are.

Just looking at a picture of where you are isn't very interesting: you can do that with your own eyes! Connecting different kinds of geodata together, you can find out a lot more about your environment than you can see for yourself or learn from people nearby. Mobile phone companies hope to sell you “Location Based Services” that tell you about shops and restaurants nearby. They also hope to sell “e-government” services to people responsible for governing a space, though no-one is sure what e-government actually is yet.

There is so much more potential in what geodata can help you find out about your surroundings; images of what the area looked like 50 years ago, stories written by people who used to live there, how different people have used the space you are in, made plans for the space and seen those plans overwritten by the passage of time. Now as never before in history, every person has the ability (if they can afford to buy or make the right bits of technology) to explore and contribute to a “collaborative map” showing how people and things interact in space over time.

In order to draw a collaborative map together, one person needs to agree with another that they are talking about the same thing. We can decide to give labels to things – the strip of tarmac outside this house is labelled “Massachusetts Avenue” – but when we talk to a third person, we need an easy way to teach them what the labels are and what the labels mean.

People trying to create knowledge together on the World Wide Web needed to define “standards” which say, more or less: “when we use this set of labels for things, we agree that we are all talking about the same thing”. HTML – the HyperText Markup Language – is a simple standard for talking about different parts of documents – what a title is, what a paragraph is – in a way that makes it easy for computers to show humans the “same thing” when they look at a document. In order to keep the standards honest and make sure that they work in the same way for as many people as possible, “standards bodies” come together to represent different views. Standards bodies are a kind of government system for deciding how information is transmitted from one place to another.

As geodata is becoming more interesting and important, more people want to create standards that make it easier to share. One important standards body is the “Open Geospatial Consortium”, a group of companies making software that helps people work with geographic information. They publish

a Geographic Markup Language which can be used to describe spatial things. Arguably the most important standards body on the web is the World Wide Web Consortium, or W3C, created by Tim Berners-Lee, whose work on standards made the web possible in the first place. His vision is of a “semantic web”, which allows people to more easily and reliably create and exchange meanings of labels for things with software.

Wikipedia has an nice definition of what an “infrastructure” is; a kind of internal framework that allows people to transport knowledge, or things, or other people, from place to place. Standards for describing information are the bricks out of which an “information infrastructure” is built; we would not be able to share definitions and decisions without them. Standards for describing geodata – where things are and how things relate to other things in space – are the basis of what is called a Spatial Data Infrastructure.

Is an SDI really necessary to share data? Different governments view this in different ways. The US government gives away a lot of the geodata it collects through its Geographic Survey and Census Bureau, allowing anyone to create their own maps and “locative media” with it. The UK's Ordnance Survey, like most European National Mapping Agencies, sells temporary rights to use its geodata at the highest price it can get away with. So in Europe, a lot of amateur programmers and enthusiasts have come together to build shared, open maps from different sources of geodata – “tracks” that show where a GPS unit has been, low-quality satellite photographs published by the US government.

The Open Geodata Manifesto talks about the social and economic reasons why open access to geodata should be considered a right, not a privilege. It lives at **http://okfn.ogr/geo/manifesto.php**. It offers these suggestions as the core of an open geodata policy:

All government-collected geodata should be open, that is, available for free distribution and re-use under a ShareAlike license.

Online mapping projects creating freely reusable geodata should offer a compatible open license.

Common, standard formats for describing and exchanging geodata should be adopted.

Ultimately, all state-collected information should be openly available, in a structured machine-readable format.

Because there weren't standards really designed for collecting data from a lot of different, potentially unreliable sources, Openstreetmap had to create its own. As the industry standards bodies wake up to the new things that people want to do with maps and geodata, their own standards are improving, changing in ways that make it easier for people to write software to share geodata between each other.

So perhaps it's easier, faster, more fun and even more “correct” to put geodata on the Web just as we put documents on the web now, and create a “geospatial web” together, rather than letting governments try to build expensive SDIs that are designed to “protect” geodata from people rather than let them share in its creation. Chris Holmes neatly summed up the possibilities here at the end of the Open Geodata stream at Wsfii:

> Geodata should be something that is taken for granted as a base for further free information infrastructures: open source traffic modelling, open source environmentalism, natural open source resource management. The geospatial web should be a texture, just like the internet is the basis of many other infrastructures on top of it.
>
> We're only going to only get there together, we need to build this, we need to free the spatial data infrastructures from the powers that be, tailor them to our uses and build something better than they could even possibly imagine.

first draft 19-01-2006 - second draft 23-01-2006

• Author : Julian Todd

• Publicwhip

A Government is a system for gathering and focusing power to certain ends. Watch carefully how this happens. In the UK the central authority is Parliament which everyone, even the Queen, agrees is supreme. What it says goes. If a long or short document is laid before it, and voted upon, and there are more “Ayes” than “Nos” cast by the members of the House according to procedure, then that is what Parliament says. Literally.

I only found this out on 18 March 2003 because, like millions of others, I was involved in the campaign to stop the invasion of Iraq. The horror of it was that we could watch the event in Parliament on TV and see clearly the very room where 600 very privileged, comfortable, respected men and women who were not in fear of their lives could have carried themselves bodily through the door marked “No” at 10.14pm, and a large quantity of massacre machinery – as Kurt Vonnegut calls it – would not have been flown from from here to there and exploded over living human beings who had done nothing to suggest they wanted to die.

Had these men and women voted “No”, the military orders could not have been given because too many people in the chains of command, from the bomb warehouse keepers to the young men who pressed the buttons in their long-range, supremely high-tech aircraft high above defenseless cities (the codeword for “air supremacy”) would have questioned just what the hell they were doing.

Though many excuses and downright lies have tried to obscure the fact, here were two human events that were inextricably linked. Those doors into the division lobbies in Parliament were the channels down which the ultimate act of Government power was carried. It’s like the fusebox; it’s the place where the load is measured and is supposed to circuit-break the when the power becomes unsafe.

It doesn't matter what you think. Everything I have written above is merely my personal opinion. However, no one can give this many hours to an unpaid programming project without having a lot of passion for it. And there’s no point in hiding what it is or people might falsely guess some other ulterior motive, like money or political party stoogery.

Projects largely define themselves on the basis of the shape of the data, so it is easy to forget and lose track of what made you start it in the first place. It also means that people who have an entirely different opinion to you can use and contribute to the project as well. All we have to agree on is that this is actual data, and it must be presented. The passion merely converts to how much work you put into it.

So, Francis and I have written a lot of Python, Perl, SQL and PHP designed to download, identify and present all the votes that occur in Parliament in every form we can imagine. We’ve discovered quite a few interesting

things we didn't know before. We clearly don't have the sort of democracy we thought we had, and we still have no idea how the decisions are really being made. All we can be sure of is that these are the decisions that have been made by the Government, and we know the names of those in Parliament who chose to ratify them.

One decision many of us are waiting for is when will the Government to release all the Geodata it has collected over the years to the public in a standard form so we can build stuff with it. Technically, this could happen tomorrow if someone proposed it as a Bill in Parliament, and it was voted on according to a procedure and passed as an Act. We'd be able to read such an Act in a law library and find that it would lay out the shape of the bureaucracy which the civil servants would need to create to allow us to access this data in an orderly manner, as well as a system for maintaining it.

It's worth reading these Bills and Acts of Parliament because, although they are written like bad pieces of computer code full of unnecessary go-tos, they say everything about how it's supposed to work. Look at the ID Card Bill; don't get fooled by the features listed in the brochure or the cover. The real material is in its text. It's an extraordinarily huge and broad project that shows just what can be done with a healthy dose of ambition.

Maybe we should write our own Bill to give us total access to all Government Geodata and begin showing it to people. If anyone says it's impossible to give us all this data, we say "Not so. All they have to do is vote this piece of paper through Parliament, and it's done. What's impossible?" We shouldn't leave writing the law solely to the experts any more than we allow software to be written solely by private companies; they might not get the job done.

The law is what the whole system rests upon. It is what fundamentally accounts for the difference between what goes on in Parliament and what goes on in some particularly well-funded gentleman's club with its debates, coveted offices and celebrities whose gossip doesn't make the vaguest difference to the outside world. Maybe we get to vote someone off the show now and then.

People like us don't read the law. We leave it to experts to look at. When we view the version of the law available on the "Office of Public Sector Information" website we observe that it's not all there. What we see are a set of patch files that go back to 1988, but these are not the law. The law is everything passed by Parliament back to 1215, consolidated into one single code-base, preferably in a version control system so that we can see where it was on any given date, and how it's changed visually in colour as we do with real computer code.

Here's a surprise. There are a couple of companies who have the law partly in this form which they sell access to at an extortionate cost. This is what

judges and barristers refer to when they do their work. We don't get access to it. The Government also has the law more or less in this form in what is known as the "Statute Law Database". They have refused to publish it on the web.

We the people do not have open access to the law in the form that it is used. We therefore do not know what changes to it Parliament is actually making, so we don't know what's happening, even though we can see it happening.

It's as if Bill Gates were to install live webcams in all the offices of Microsoft and claim that his company is now open source because everyone could see what his programmers were typing on their computer screens if they chose to. He could allow us to vote on who becomes the lead programmer in each office. Such a move would fool enough people that the company had been brought under democratic control. That's what we have been taught to accept from our Parliament and Government, and very few of us are willing to imagine how it could be otherwise.

We know what access to information, and therefore power, looks like. Accept no substitutes.

• Greenman and Mary Fee

• Why Build Your Own Community Currency System?

A Local Exchange Trading System (LETS) is a community-owned and run currency system based on a zero-sum model, as opposed to monetary systems in which the money-suppliers continuously add interest, thereby increasing the money supply. Each member's account is usually set to start at zero; in order to trade on average half the accounts will be "in commitment" but with no interest being charged or earned at either end.

The zero-sum system enables members who engage in mutual exchange activities to record the value of that exchange, as a simultaneous plus and minus in each other's accounts. Historically, some LETS groups keep manual ledgers, others use standalone database systems to carry out these transactions. The next generation of networked community currency systems is changing the scene, immensely.

During Wsfii, a local currency was used to manage internal accounting between organisers, and provide attendees with food tokens redeemable in the local shops. The “Lime” (short for Limehouse in London, where Wsfii was held) was not a LETS system proper, but an Event Currency only usable within a discrete period of time. This seemed like excellent way of bootstrapping what could become a fully-developed local currency, because it established with local traders the idea that Limes are real, they equate to the mainstream currency, and they work for all. Once confidence is established, it becomes possible to take the currency “virtual”; so traders would not necessarily feel the need to cash out in sterling, but could keep a balance on their Limes account.

An ideal scenario: perhaps they need some help to serve behind the counter. They could connect to a local information portal and consult a directory to find someone willing to do this kind of work in exchange for Limes, which are redeemable in other local shops. This scenario may be some way into the future, but the Limes experience at Wsfii laid a good foundation for proving the concept could work.

Why would you want to set up a local exchange trading system? Motivations of people joining a currency community could vary from needing help and being short of cash to having time on their hands and wanting to help but not really feeling they could afford to volunteer. Some people worry about the actions of the mainstream banking system, which is grounded in two things: control of the mechanism for credit creation, and control of public confidence. Many also wonder if there's a way to “open-source” the things people need from central banking systems.

Talking at Wsfii, as the coordinator of LETSLink UK, I suggested that no project is more worthwhile than this to devote your energy to if you are concerned about world poverty and the monetary system which engineers it. You can protest about it, try to mitigate it or try to change the paradigm which

makes it work. LETSLink is making a real effort now to bring together the people who are working on open source community currency software systems and thinking about making them work in the world.

http://www.letslinkuk.net/members/software.htm - list of LETS and CC software in progress.

http://copsewood.net/mailman/listinfo/mrsdev - Richard Kay's email discussion list for CC software projects.

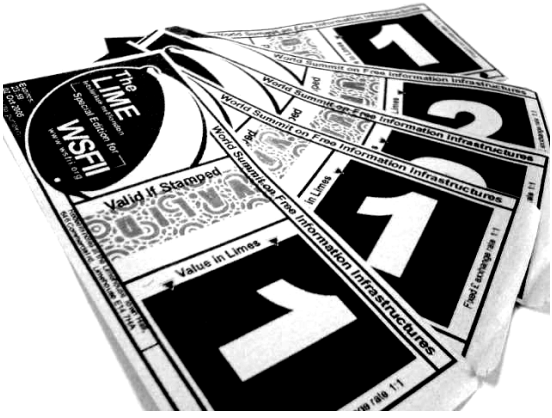
-- Mary Fee

Wsfii had an event currency called the “Lime” (short for Limehouse in London, where the event was based). The “Special Edition” Lime was valid for one week, 26 September - 2 October 2005. This edition was little more than a voucher, it was backed one-to-one by real cash, and any vendor participating in the project had any Lime notes exchanged for Pounds on a regular basis.

The currency was a “scrip”, a printed note issued in 3 denominations; two Limes, one Lime and half Lime. Notes were printed onto green paper and a red stamp used as a simple counterfeit prevention mechanism.

Involving Local Businesses

We described the Lime to local businesses as “Food Tokens”. Delegates to our conference would be given tokens which they would use to exchange for food. We gave each business about £50 as a deposit and asked them to accept 50 Limes worth of business. When the £50 was used up, we would pay them a visit and hand over more money. We mentioned that, if they were happy to accept more Limes than they had deposit for, we would reimburse them for those too.



Stores were given an information sheet on how the “food tokens” worked, as well as a small “Limes Accepted Here” sign to post in their window.

Issuing The Currency

To manage our accounting, and to ensure that the currency was fully backed, we “sold” Limes to core WSFII participants.

These backers had funding budgets allocated for food catering in the week leading up to the event. The first run of 500 Limes was sold for £500 and this money was used to pay deposits in the participating stores. The core backers were then able to distribute the Limes to members from their teams, who could spend the money as they desired. A few more runs totalling about 500 Limes were printed in the week leading up to the event.

Once the event began, we used the takings on the door to back the currency. Half of the entrance fee, £10 on day one or £5 on day two, were converted into Limes and returned to the delegate. For concession entrance, we charged £5 entrance and handed it all back in Limes. The rest of the entrance fee was used to back the Limes handed out to conference speakers. In total, we issued a little over £2000 in Limes.

Managing the Economy

Once a level of trust had been established, managing the currency became a matter of visiting participating stores once every day or two to keep our credit rating up. The store owners were all very happy to have participated and we discovered the major benefit of owning all the money – we did not need to pay for anything!

• Author : Kate Rich

• Houses of Benefit

Kate Rich and Sneha Solanki (hostexe.org) are developing a protocol for a distributed hotel – *Houses of Benefit* – in London. While guest services (concierge, breakfast, lobby) are centralised, we will be outsourcing bedroom locations around the central London area. The system is designed as a coordinated lodgings service, with local hosts sourced via social networks, providing comfortable, glamorous &/or interesting sleeping accommodation to culturally-funded visitors, in exchange for cash.

The distributed hotel idea is based on mutual benefit economics, with the intention to a) undercut standard London hotel prices; b) provide cultural visitors with a more located experience than an Ibis; and c) reroute cultural funding away from tourist/service sector by paying peer hosts direct. The idea is to put a direct value on the normally altruistic work of accommodating visitors, by supplying the private host with the kind of economic credit that hotel systems reliably receive.**[1]**

The service / Who it is for

The system is not designed for individual travellers, but directed specifically towards event-organisers and host institutions with hotel accommodation budgets to divert. Scale: in its current layout, Houses of Benefit could house from one to ten guests for periods of up to ten days. Visitors are ideally processed by batch i.e. event delegates, grouped artists visiting simultaneously, for best conviviality and economy.**[2]**

The Limits of Hospitality

We do not attempt to replicate the hotel experience – homestays clearly lack the anonymity and standardisation of the hotel. Conversely, while hotels are largely set up to emulate the natural behaviour of hosting, the limits of hospitality are generally fully articulated, priced up and enforced – minibars being a classic example.

[1] Houses of Benefit is a move towards enumerating some of the diverse, non-monetary, rarely counted methods of social solidarity that underwrite the culture scene in London, relationships that contribute directly to what is otherwise a highly valuated Creative Industry. A Creative Industry is defined by the Department for Culture, Media and Sport as one of "those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property". **http://www.culture.gov.uk/creative_industries**.

[2] Base price to clients is £50 per guest per night, £25 of which is paid to the host, the remaining £25 goes to the concierge, management and service extras of HofB. Reduced management rates on simultaneous artists are possible as Concierge work compacts accordingly.

There are obvious risks in substituting the real thing.

Conscious of the vagaries and awkwardness embedded in normal home encounters, we are designing a set of protocols which will form the core of the Houses of Benefit project: to provide a minimum set of conditions for amenable homestay under HofB guarantee. These protocols are open source and transferable to other settlements outside London. They aim for a social contract somewhere between the unmediated encounter of friendship, and the super legislated service relations on offer in the hotel sector. The advantage of Houses of Benefit is that non-professional hospitality can be open-ended, i.e. any contractual limits are designed to be exceeded.

Amenities

A key role is that of the Concierge, engaged and paid by Hostexe for the duration of the home stay.

Concierge is selected for his/her local knowledge, peer-proximity to the guests, and interest in earning cash for hospitality. The Concierge occupies a roving front desk and will track incoming flight schedules, meet and greet guests on arrival, pass over keys, maps, hospitality packs, etc. Over the hosting period, Concierge manages front desk communications via email, mobile and skype phone, answers questions and mediates in any difficulties either host or guest experiences. Host, guest/s and Concierge are sent each other's bios in advance as conversation starters. (Any personal relationships struck up/out within a hosting period are naturally beyond the management remit of HofB).

Insurance Policy: the network of dependencies between guest, host and Hostexe is largely mediated by social visibility, underwritten by mutual accountability to the Funder. Money and reputation are pitted as a stake against any misbehaviour.

Enhanced services

In the long run we are interested in more than the rehabilitation of accommodation budgets. Houses of Benefit is conceived as a platform to support other research, with commissioned and collected bedside reading for guests to include information on aspects of the London housing market, contemporary and historical. A literal investigation of the premise 'Social Housing' is also of interest to us; and we are further researching zoological models such as symbiosis, where certain creatures form partnerships with other kinds of animals or plants for mutual benefit, for example the cohabitation of unicellular green algae and the clam.

Further/derivative uses imagined for the HofB system are product placement (the critical procurement of vital guest room items such as soap, coffee, towels), and using the known movements of guests as a rudimentary freight system.**[3]**

A trial run of the system took place in October 2005. Houses of Benefit beta accommodated delegates to the World Summit for Free Information Structures (WSFII)**[4]** at Limehouse Town Hall, drawing on a network of friends for hosts. Five international visitors were placed in premises which ran a fair range from illegal Housing Association sublets to owned homes and artist studio accommodation.

Host, guest and Concierge were supplied with contracts, the hosting contract reads as follows:

Dear Host

We as hostexe.org are providing this the Houses Of Benefit accommodation service, to host guests in your home as a social contract between ourselves and yourself as the host. Please read the following information on our hosts' policy and hosting requirements for this service.

Policy
You will provide your guests with:
** A full set keys and information required for access into your home (advanced to the Concierge, who supplies to guest upon arrival)*
** A personal and private sleeping space for the guest*
** Bedding: sheets & duvet*
** Full access to the bathroom*
** Access to power*
** A bedside lamp*

Hostexe will provide your guests with:
** neck chain/lanyard for the security of your keys*
**phone card (£5) for outgoing phone calls*

[3] See Feral Trade Courier at **http://feraltrade.org/courier** for the traffic of goods over social networks.

[4] See WSFII programme at **http://www.okfn.org/wsfii/programme.html**

** google map defining the location of your home; bus map for central London*
** card with host info, bio and address, to be stored separately from keys*
** concierge phone and skype number (by email prior to arrival)*
** breakfast, lobby and concierge services at a public venue separate to your premises*

Hostexe will provide you with:
** guest's bio and arrival/departure information*
** £25 per guest per night*
** guest towel if requested*
** cost of any keys cut*

Incoming guest calls, access to the kitchen and washing machine can be provided for guest use at your own discretion.

Your guests:
** the guests will be following a 'no smoking' policy.*
** the guests will take full responsibility for keys.*

Hostexe:
** Hostexe will keep a spare set of keys in case keys are lost or misplaced by the guest.*
**the keys will be kept separate from the host address and in safe storage when not in use by the guest.*

In the undertaking that the social contract is paramount, hostexe.org have opted for no external Insurance policies for this system. We trust that responsibility is taken on board by all 3 parties involved (host, guest & hostexe), each respectful and responsible for their own actions. Breakages will be paid for by the breaker.

If you have any problems or queries whilst you are hosting, please contact the concierge.

thankyou
hostexe.org

Assessment - Collected reflections from hosts, guests, WSFII and Hostexe after the trial HofB run

In general, guests reported their pleasure with the unfettered incidentals found in homestay (cricket, markets, book loans) and did not miss the absent abstract comforts of a hotel. Social warmth generated rated high, both within guest-host pairs and also in broader transmission of the HofB idea around the WSFII event. Concierge was surprised and pleased to notice that guests automatically treated her as peer/professional and not a simple support service. Several hosts and guests planned to stay in touch after the hosting period was over. The £40**[5]** per guest per night charge substantially undercut close competitiors, for example Ibis Hotel Shoreditch £59.95.

Contingency: illness &other unpredictabilities of real life are critical factors to be planned and budgeted in, as sick hosts/guests or unannounced arrival of illegal sublet landlords will reduce the comfort of the homeshare situation. As one host described it, a system built on insecure housing needs its own security plan. The £25 management fee per guest per night has been factored with this in mind, and Hostexe plans a standard hotel room evacuation policy for the next implementation, so that unwell guests will have a simple getaway where necessary.

Commonality: one guest regretted the lack of shared evening lounge space, a facility we plan to implement in future Houses of Benefit using local event-space, public bar or convenient hotel lobby.

Concierge: As this was the first run of the system, Hostexe opted to self-concierge the experiment. This was useful on a management level, but patchy when it came to ground work and local knowledge (neither Ms Rich nor Ms Solanki actually resides in London, in part due to unobtainable rent).

Further test implementations of the system are due to take place in 2006, please contact hostexe for more information, hosting or guesting enquiries: **flat@hostexe.org**

[5] Both hosts and Hostexe received a reduced rate for trial run, due to the experimental nature of the service.

• Future Wireless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• Author : Lewis Sykes

• FUTURE WIRELESS: practical.discourse.creative

Overview

Wireless technologies have changed the world and continue to do so at an unprecedented rate. But as we embrace these technologies, we also need to ask how are they changing our personal and social spaces? Do we really want mobile phone calls on commercial flights – or is 'always-on' culture making us wireless wage slaves? Who owns the wireless world and how can we truly realise its creative potential beyond the realms of corporate culture? Has wireless technology liberated communication or has it simply revealed a darker, more dysfunctional side to our natures? What can users and practitioners do to take control of the airwaves and shape and colour their own future? These are just some of the global issues, which Future Wireless addressed – not just through live debate – but also through practical demonstration, workshops and unique artist interventions.

Cybersalon, working in collaboration with Open Spectrum UK and in partnership with the Science Museum's Dana Centre and NODE.London, commissioned a day of debate, guerrilla art and wireless workshops. It assembled an international group of cultural commentators, researchers and artists alongside free wireless network activists and commercial developers to probe the nature, impact and potential of the wireless internet, mobile telecommunications and other radio based technologies.

Through an ACE Grants for the Arts Award, Cybersalon supported research and development projects by three artist groups – taxi_onomy, Someth;ng and Troika – to develop critical and constructive interventions into the event programme that highlighted the potential of a wireless future. These interventions were designed, developed and delivered by the artists and aimed to facilitate communication and exchange between participants and visitors at the Dana Centre, remotely, and at the other NODE.London events throughout the course of the October 2005 Open Season.

The *Wireless Horizons* evening panel debate gathered leading figures from industry, academia and the front-line of wireless activism to explore the social, cultural and political contours of a wireless future.

Chaired by John Wilson, co-founder, Open Spectrum UK, participants included

*Dooeun Choi - curator, Art Center Nabi, Seoul, Korea.

*Peter Cochrane - co-founder, Concept Labs (formerly CTO of BT).

*Robert Horvitz - coordinator, Open Spectrum International, Prague.

*Adam Hyde - new media artist from New Zealand, with a special interest in streaming media, in both visual and audio contexts.

*Tapio Mäkelä - researcher and media artist, USED project in collaboration with m-cult centre for new media culture, Helsinki, Finland and HIIT.
*Francis McKee - research fellow at Glasgow School of Art and part-time Head of Digital Arts and New Media at the Centre for Contemporary Art in Glasgow.
*Ian Robinson - BT, Head of Emerging Internet Access products and Wimax expert.
*Marc Tuters - researcher in new media, University of Southern California's Annenberg Centre.

Future Wireless was part of a series events and projects programmed by Cybersalon as founding an 'artists in residence' programme at the Science Museum's Dana Centre.

To find out more about Cybersalon visit the website **http://www.cybersalon.org**

• Author : Dr. Richard Barbrook - http//www.imaginaryfutures.net

• Future Wireless Introduction

> "It is possible to be enthusiastic about contextualised use of new technologies while being critical of technological progress ideology that still so thoroughly surrounds even critical techno-cultures".
> Tapio Mäkelä

Here we go again. Back in the mid-1990s, the Web, virtual reality and the information superhighway were going to change everything. According to the prophets of the Californian ideology, if you weren't wired, you were tired. A decade later, Wi-fi, locative media and mobile VOIP are now the iconic technologies. Artists, activists and entrepreneurs are getting more and more excited by the wonders of mobile computing. Wired has become tired and wireless is the new future. But, before we become too enthusiastic, shouldn't we pause for a moment of reflection? The arrival of the Net inspired an orgy of McLuhanist hype, which – in the aftermath of the dotcom bubble – now appears absurd. If we don't want to repeat the same mistake, we will have to do some intelligent thinking about the possibilities and pitfalls of mobile computing. As their contribution to this process, Cybersalon and Open Spectrum UK decided to organise the *Future Wireless* conference. On 4 October 2005 leading experts and practitioners came together at London's Science Museum to discuss the locative shape of mobile things to come. This section offers a selection of their arguments. The contributors don't claim to have all of the answers. What they're offering is a starting point for the debate over the future of wireless.

If about nothing else, the authors are agreed on one thing: new technologies are transforming telecommunications. For over a century, preventing interference between different signals has provided the ideal excuse for limiting access to the airwaves. As Robert Horvitz points out, the rapid spread of Wi-fi proves that this top-down regulatory paradigm will soon be obsolete. Using software, large numbers of people can now share the same frequency. Imitating the Net, the new telecommunication systems are being built bottom-up around open standards and open spectrum. When there is an abundance of frequencies, everyone can be a broadcaster.

Burnt by the dotcom bubble, it is tempting to be cynical about these hi-tech prophecies. Are the marvels of Wi-fi just another way of persuading us to upgrade our laptops? More importantly, Francis McKee warns that mobile computing could also threaten our civil liberties. Like CCTV cameras, ATM records and phone logs, this technological innovation enables the authorities to track and monitor our lives. Even inanimate

objects can now be kept under surveillance with RFID tags. For Marc Tuters, a premonition of this dystopian future can be found in the post-modernist philosophy of Gilles Deleuze. Our fascination with technological liberation could be leading us towards the triumph of political authoritarianism. With Bush and Blair claiming that their 'War on Terror' justifies the abuse of human rights, we must make sure that the advantages of wireless communications aren't outweighed by its disadvantages.

Ironically, technological pessimism is derived from the same assumptions as technological optimism. In his writings, Marshall McLuhan found no difficulties in advocating both positions at the same time! But, as Giles Lane emphasises, a technological determinist analysis has to assume that the social and cultural implications of mobile computing are predetermined. He asks what if we take a different approach: Wi-fi as a tool with many different uses. The contributors to this section argue that we can – and must – shape his new technology in our own interests. Above all, experts and practitioners have to intervene in the policy debate over telecommunications regulation. Imitating its Tory predecessors, the Blair government wants to impose neo-liberal panaceas upon this sector: auctioning frequencies and proprietary standards. Rejecting these anachronistic 1980s-style policies, John Wilson advocates the up-to-date twenty-first century solutions: open spectrum and open standards. Like markets and factories, networks provide a structure for large number of people to work together. Echoing Adam Smith, he believes that the spectrum has now become the "Invisible Wealth of Nations".

As well as encouraging a more advanced form of economics, wireless communications also promises to improve our political system. Robert Horvitz argues that access to the airwaves should be treated just like free speech: a basic right of all citizens. When everyone has Wi-fi, all citizens will be able to participate in the electronic agora. As their contribution to the struggle for democracy, artists are turning the digital Panopticon against its masters. The *MILK* project and *Taxi_onomy* have cleverly used logging, tracking and surveillance to make clear the economic and social connections between people that are usually hidden by money and markets. In a society founded upon commodity fetishism, defetishising the commodity is a subversive act. This political-aesthetic technique also challenges one of the favourite tropes of the Californian ideology: leaving the meatspace to live in cyberspace. As Marc Tuters reminds us, Manuel Castells analysed the Net as a 'space of flows' that existed outside the physical world. In contrast, locative

media creates a ‘space of place’ that connects people with their geographical surroundings. Hyper-reality is no longer the substitute for reality. Instead, mobile computing is augmenting and improving reality.

What can we learn from the contributors to the *Future Wireless* section? In the mid-2000s, scepticism about McLuhanist techno-optimism has to be combined with disdain for Deleuzian techno-pessimism. If we don’t want to be trapped by these imaginary futures, we must invent our own – and better – futures. Above all, we must have confidence in our own abilities to shape the development of mobile computing. *Future Wireless* has brought together people from very different backgrounds and political positions. By discussing their hopes and fears about mobile computing, they discovered that they had much in common. As Dooeun Choi says, we can all work towards the same emancipatory goal: human-centred communications. Once you’ve read the *Future Wireless* section, it will then be your turn to make a contribution to building our locative, networked and mobile future.

● Author : Dooeun Choi, Curator, Art Center Nabi, Seoul, South Korea

● Towards a Human-centric Communication

Wireless technology lets us be connected anywhere and anytime. So we can expect that a wireless future will bring much more 'ubiquitous' connectedness. However, a single node can only manage a limited number of branches, so there should be intermediate nodes that vary in terms of quantity and quality. Therefore the important issue is to whom and what we would like to be connected. The utopia of a wireless future might come if we can figure out how we can relate with other valuable nodes and classify them as 'personal' cases.

In Korea, there is a community-based portal site called *Cyworld* whose membership includes over a quarter of all Koreans. 'Cy' in Korean means 'between'. What makes *Cyworld* unique is that they have an 'Ilchon' system similar to the Korean family system. Through this system you can decide who can see what of your content. There is content only for your Ilchon that the public cannot access. If you become an Ilchon with someone you can also see their content, which is intended only for their Ilchon. Even Ilchon has several classes that break down your openness to others in more detail.

Wireless technology also creates the opportunity to be a meaningful node. In the age of new media, there are numerous channels through which you can express yourself. Through these channels, you can become a narrowcasting 'media provider'. For example, Art Center Nabi runs a mobile art gallery, ?gallery, which serves screen savers for mobile phone and micro-movies made by artists. However, since camera phones came out, not many people downloaded the pushed content. Users preferred to make their own screensavers and content and wanted to narrowcast what they made. Moblog is a good example of this.

A wireless future that encourages lively, creative players who play in their local context to create various narrowcastings will bring a rich spectrum to our lives. If we as the creative players become more responsible to each other, I believe that a wireless future will contribute toward a more human-centric communication.

http://www.nabi.or.kr/

● Author : Celine Condorelli and Beatrice Gibson, taxi_onomy

● Future Wireless Vision

Our vision of a wireless future is dystopic. Being constantly connected means you are forced to simultaneously be doing several things at once, and we see this as a fundamental problem. A world in which we cease to process because we are swamped by the varying and multiple trajectories of information means, in fact, that we are increasingly distracted by our own technology, and that we cannot escape our own data. We become in essence the victims of an economy of distraction.

Our vision of future wireless, however, is utopic. Where a wireless future is one we find ourselves to have landed in, a future wireless is one we have moulded ourselves. The potential to appropriate, inhabit and parasitically adapt the economy of distraction into a future wireless predicated on community means, is what excites us. A future wireless transforms the technology of locative spam into something that can be appropriated for communities, or for the individual, undermining its own problematic. Wireless technology is a tool only interesting when used for specific purposes; if it allows a community to be self-sufficient for example, in terms of how it communicates or in terms of how it archives its own information and its own memory then that's a fundamentally democratic process. But then, what is interesting is not the wireless per se; rather, the way the wireless has facilitated the archive.

A future wireless in a future in which we can roam the streets free of wires, connected but having the right to disconnect, connected and having the right to redistribute our connection, re-appropriating territory and rebroadcasting it.

http://www.taxionomy.net

• Author : Robert Horvitz, Open Spectrum Foundation, Prague

• Future Wireless Vision

"Open Spectrum" is based on the realisation that technology can reduce or even eliminate the need for governments to micro-manage wireless communication. In different contexts it can be viewed as:
- an ideal of freedom in the use of radio frequencies
- a critique of traditional spectrum management
- a possibility arising from trends in radio design

For almost a century, governments have imposed detailed limits on the use of radio – who can transmit or receive what frequencies and waveforms, at what power levels, in which locations, for what purposes. Licenses summarise these controls for specific users or "stations". State control of radio usage goes far beyond what is accepted for other media, (speech, publishing, photography, internet etc.). Yet most people accept strict rules for radio in the belief that they are necessary to prevent chaos and interference.

However, during the past 20 years, smarter radios have been developed that go a long way toward solving problems which once seemed to require government intervention. Cordless phones can automatically scan a band to select an unoccupied channel. Cellular GSM phone networks dynamically assign frequencies when handsets are activated, and set signal levels to the minimum needed for an adequate link. Smart receivers can separate signals that are coded differently even when they occupy the same channel. Smarter radios tend to combine ease of use with better link quality and support for novel applications. The combination of these attributes has fueled explosive growth in public demand for wireless devices. And the spread of these devices dramatically improves economic efficiency, productivity, personal safety, convenience and social cohesion.

But the wireless boom also drew attention to the fact that regulations designed to protect "dumb" radio equipment from interference create artificial shortages of frequencies. Recent surveys have shown that static frequency assignments can result in band utilisation rates as low as five to ten percent. A few radio experts began making this point in the mid-1990s, laying the groundwork for Open Spectrum to emerge as an alternative model in spectrum management. But it was the US Federal Communication Commission's 1985 decision to allow new communication technologies in the bands for unlicensed Industrial, Scientific and Medical (ISM) devices that jump-started this evolution.

Communication in the ISM bands must tolerate interference. This is in contrast to traditional spectrum management, where the aim is to prevent interference. Protection against interference is normally achieved by not letting other transmitters use a licensed channel within a geographic

"protection zone". But Wi-fi – a technology that developed in the ISM bands – showed that large numbers of people can share a band, without specifically assigned channels, if everyone uses low power and waveforms designed to soften the effects of interference. With no protection zone, there is no technical justification for licensing Wi-fi. And indeed, most countries now exempt Wi-fi from licensing, as shown by our global survey.

Wi-fi is often cited as Open Spectrum's "proof of concept", validating "unlicensed commons" as a practical paradigm in frequency management. However, it is also important to note that Open Spectrum is a much broader concept than Wi-fi. At the same time, Wi-fi works as well as it does because of widespread voluntary acceptance of the IEEE 802.11b standard, and because of mandatory processes of "type approval" (in which equipment is approved by regulators for unrestricted sale if it conforms to certain parameters, particularly as to radiated power and frequency use). Thus, unlicensed is not the same as unregulated. Open Spectrum supporters seem split by this distinction, with some arguing for complete deregulation, and others (like ourselves) embracing type approval as preferable to licensing.

Some people think radio technology is evolving inevitably toward a future where traditional forms of regulation will be impossible. Billions of Radio Frequency IDentification (RFID) tags are likely to spread around the world in the coming decade; they will be as hard to control as an epidemic. "Software-defined radio" is another challenge. More and more radio functions that had been performed by hardware are likely to be implemented in software in the future. If this software is open source, or can be modified or replaced after purchase, "type approval" processes are undermined.

What then? Optimists envision a post-regulatory future where Darwinian competition in the marketplace will yield the "fittest" devices – equipment immune to interference and capable of automatically finding and exploiting any morsel of under-used spectrum when needed. Just as the largest animals tend to be placid vegetarians, the users of powerful radio equipment may choose not to cause interference, for the benefit of all. Widely supported standards and protocols for automating co-operation and "politeness" seem essential for the success of this scenario. If some spontaneously self-organizing system can be devised for quickly imposing penalties on interferers, everyone could feel more confident in such a future.

Our own goals are more modest. We would like to eliminate governments' role in granting permission for individuals and organizations to use radios

harmlessly, particularly in developing countries. To state that positively, we want to unleash the benefits of wireless communication for economic and social development in the places that have the most to gain. As the need diminishes for treating radio with special strictness, to counteract the technology's shortcomings, radio regulation should converge toward the rules that apply to the most common medium - ordinary human speech. It may take a while to get there, but progress along the way will be marked by economic growth and improvements in the quality of life.

http://openspectrum.info/

● Author : Adam Hyde, New Media Artist, New Zealand

● Future Wireless Vision

Wireless began its life as a synonym for radio. However, now the two are becoming cousins, related by a common physical phenomenon but also with distinct emergent identities.

Since the advent of the internet, 'radio' has been transformed. A web of binary data protocols has augmented the medium of 'air' for casting sound. Radio has been separated from its parent phenomenon (the electromagnetic spectrum) and its meaning has been constrained to describe the delivery of sound over distance. The casting medium has been hybridized, augmented and replaced. Since the popularity of MP3 players (for example), the casting medium has become us. We download radio and deliver radio content to others through portable MP3 players and USB discs. People are now radios, we are becoming the medium.

In addition to this transformation of the casting medium, it won't be long before radio must decide if it is just sound. The open source audio and video developments housed under the OGG **http://www.xiph.org** umbrella use a single file suffix for audio or video data: ".ogg" suggesting that there maybe no need for radio to identify itself as a sound-only media.

Wireless is also now divorcing itself from sound. Its medium is the air, and in that way it is closer to its parent origin. However, its content is diversifying. The 'wireless' is now used to tell us where we are, to sense others and to allow us to communicate with others. The air is becoming an any-to-any media.

The wireless is now a medium for casting binary information, an irony, as continuous waves are utilised to deliver the most concrete and basic building block of discrete data – the one and the zero. The analog wave is now a carrier for its digital antithesis. The medium is not the message; it is the carrier of another medium with another message.

Interestingly the process of creating digital data creates electromagnetic waves. Every electronic device we use creates an electromagnetic field and the characteristics of these transmissions are affected by the data we create. The remnants of our ideas are broadcast as distinct fingerprints in the air. Whether our wireless imagination is polluting a spectral environment we can't see or touch, an environment that we usually only experience by hearing through the radio, is an interesting question.

http://www.streamingsuitcase.com

http://radioqualia.net

● Author : Giles Lane, Proboscis, UK

● Wireless Future Issues

The focus on technology deployments must go hand in hand with sensitive community development work, otherwise there is a danger that only the 'early adopters' and people most like those excited by the technologies will participate and this will exacerbate a 'digital divide'.

It is important to remember that wireless technologies are just plumbing – the focus on what applications and services they will enable is critical. If all they offer is untethered internet access, then what exactly is so radical or transformative about that? It is, in fact, the services and opportunities that they give access to that is the crucial issue. The biggest hurdle seems to me to be orchestrating and mediating not only the different technologies that wireless access could enable but also the social, cultural, political and economic forces that will shape and determine the uses of such technologies.

We need to be developing projects that have not only a technology factor but also work closely with actual people and communities. We need to develop creative projects and approaches that understand the broader policy frameworks and how to lobby for change; projects that understand and can envision a wide range of economic benefits (tangible and intangible) and articulate their value in everyday terms; and that add richness to the cultural background of our society.

http://www.proboscis.org.uk

• Author : Tapio Mäkelä, Helsinki Institute for Information Technology, m-cult, Finnish Centre for New Media Culture

• Wireless Creative Fringe and Popular Mobile Cultures

In Norway, it is believed that the fastest growing mobile market is the country's sheep population, who in the future will carry a customized GSM device transmitting location and other contextual information. Should the creative wireless practitioners follow the pack and start planning for new projects in the rural locative context?

Creative wireless practitioners ranging from engineers to designers and artists have to a large degree followed each emerging technical niche or economical market. These thresholds of speculation are also very fruitful for researchers and theorists alike, not to mention national decision makers in the public sector, who rush to shift emphasis of funding policies.

The other side of the pun is that as a given national market has become saturated with mobile phone devices, rather than investing into more advanced user/consumer driven concepts and services, the emphasis has shifted to invest abroad as well as to the so called M2M (machine to machine) wireless communication market. After the .com crash much discourse, research, and design experiments has been done along the lines of "user-centred". Except for changes in the features of mobile phones and fairly traditional concepts such as Skype, the 'voice-over-IP' (VOIP) service, widely popular wireless practices are few.

The reason why I emphasize popular practices is that artistic and expressive, socially or politically oriented wireless projects should also have a conscious relation to the field outside of their own, and particularly to non-expert users. Currently, whether we talk about Blast Theory's *Uncle Roy All Around You* or Proboscis' *Urban Tapestries* here in the UK, or *Nine* in the Netherlands, *Situations* in Finland or the *MILK* project in Latvia – they are accessed by a tiny expert fragment of mobile users within a creative fringe and usually within an event context. Events have become a temporary public interface for the creative wireless sector. Bringing the projects to street level, outside festival or exhibition contexts, would also allow a more critical user-audience feedback.

One of the main challenges is to bridge the gap between the creative wireless fringe and different, not necessarily general, but more specific sub-cultural user groups or "user layers" (by layers I mean that there is no "group" identity, and affiliations can be translocal and transcultural). The industry is accustomed to design horizontally for traditional markets while the creative wireless fringe is often satisfied to become itself the subculture for which to design. An interesting niche lies in various combinations of subcultures and technologically experimental fringes. Whether the sub-culture is connected to lifestyle, political activism or other local movements, the point is that an interconnection between a meaningful lived experience and wireless technology application could potentially be made. In other words,

wireless applications and projects might then be designed, not because the technology is there to be used, but because it provides communicational, expressive or other new features for a particular context.

Wi-fi, GPS, mobile devices as such are far from rich as expressive media, and they certainly are not a rich context as a site of meaning. If in the early nineties "jacking in" to cyberspace became a silly mantra, then being "wireless" is equally devoid of meaning for a real person. Unless one subscribes to the inter-planetary channel of Nikolai Tesla, Marvin Minsky, Roy Ascott and the like for whom there is always a metaphysical quality to technological innovations.

In early stages of each technology, like the popular internet for example, or VR, it takes years before the fascination of the mere existence of that technology wears out. The connected world and the immersive user with all the cyber blah blah took off only 10 years ago as a popular discourse. In fact, early web and VR experimentation were at the root of the popular phenomenon of the internet – with films like *The Matrix* arriving later on. So in this sense we may be looking at wireless-based experimentations as a similar stage as the early 1990s web and VR activity. There is much more sobriety in relation to techno-futurism in comparison with the VR hype, yet, I don't see as much analytical or critical reflection but more of a "let's do it" attitude.

The other side of the popular wireless culture in relation to the not-yet popular and never-want to be popular is that many practitioners were very active in the earlier stages of the internet but have "moved on" to become wireless artists and designers. Are we talking about simply seeking success, going where the money flows, technological fetishism or a kind of techno avant-gardism? If it is the latter, where the claims are that it is critical to be influencing the latest communication technology developments, then the word 'critical' needs to be redefined.

From the perspective of art or media art history, working with new technologies to create alternative uses and experiences has been a central focus, hence the art in the wireless can be seen as a continuity of that tangent. However, what is the nature of the alternative? Personally I find it interesting, and necessary, to oscillate between a critical, analytical position and that of the maker of projects. It is possible to be enthusiastic about contextualised use of new technologies while being critical of the technological progress ideology that still so thoroughly surrounds even critical techno-cultures.

http://www.hiit.fi/, http://www.m-cult.org

● Author : Francis McKee, Head of Programme, Centre for Contemporary Art in Glasgow, UK

● Future Wireless Vision

I see two areas of potential worry in a wireless future.

The first is the accelerated loss of privacy. Iris printing in airports is already with us and soon a formidable quantity of data will be attached to these prints. The pervasiveness of wireless technology simply allows this information to be accessed much more quickly and much more comprehensively than ever before. In the post 9/11 + 7/7 context where individual rights are being eroded in the name of protecting the greater public this poses serious threats to liberty and individual privacy. (There is also the annoyance and manipulation of accelerated advertising targeted more specifically at each person's consumer profile in every public arena).

The second lies in the availability of an archive of information that wants to be universal and all encompassing. The internet was once refreshingly unreliable in terms of content but it is quickly becoming authoritative and gaining real depth in terms of research, interpretation and data. As a researcher I am naturally excited about this and use the internet on a constant basis for my work. I am wary, however, of the potential ubiquity of this information. Just as museums see it as a duty to inform visitors in every way about every object, wireless technology is beginning to give us information about everything around us.

There's only a slight worry about the bias of this information as I anticipate IndyInfo growing as quickly as AOL and Yahoo guides. My real concern lies in the diminution of unmediated experience. There is always the initial thrill of confronting a space, object or person in a state of ignorance and relying on intuition, learning on the spot or biological reflex. Even Orange recognise this in their new ad – "the city had to switch off for people to switch on" (attacked in the *Telegraph* as being "too intellectual").

These elements taken together downgrade the importance of presence and immediate, unmediated experience. We are circumscribed by our pasts in terms of information profiles for the authorities and retailers. We ignore the present for the sake of the elsewhere and we drag the baggage of a universal, historical archive of information with us wherever we go. Even our mobiles give away our location.

http://www.francismckee.com

• Author : Marc Tuters, Researchers in New Media, University of Southern California

• Locative Space: Situated and Interconnected

Locative media refers to a mobile media movement in which location and time are considered essential to the work. As locative blogger extraordinaire Thomas Angermann of Angermann2 says in response to a post on "Mapping Hacks" by Schuyler Earle and Jo Walsh, "at one level, thinking 'locative' means doing geo stuff without actually having learned the traditional geo toolsets [read, geographic information systems (GIS), ED]".

A term proposed originally at an obscure workshop in the Baltic several years ago, locative media now gets 220,000 hits on Google. On any given day a steady stream of locative projects are documented in blogs such as *Networked Performance* and *We Make Money Not Art*. Critical theory has, however, come out against locative media.

In his 'Drifting Through the Grid: Psychogeography and Imperial Infrastructure' published in the journal *Springerin*, Brain Holmes advocates "conceiv[ing of] the worldwide communications technologies as Imperial infrastructure". According to Holmes, since GPS satellites are controlled by the US Army, "when you use locating device...: you are interpolated into Imperial ideology".

But while maps may have traditionally been a form of visual knowledge generated by and for Imperial ideology, new practices of information technology begin to open up the practice of mapping to civic society. A great number of projects beyond locative media are working to make the flows of a Networked Society more visible and transparent.

Perhaps the locative project par excellence is *MILK*, winner of this year's Golden Nica at Ars Electronica. With *MILK*, the artists, Esther Polak and Ieva Auzina, used GPS trace routes to create a form of landscape art for network society. *MILK* is based in part on a project by Polak and the Waag Society, *Real Time Amsterdam*, in which Amsterdam bicyclists created a map of city's bizarre traffic routes by the sedimentation of paths measured by their GPS transponders over a period of weeks. Polak's latest work connects Manuel Castells's "space of flows" with his "space of place" by tracing the path of an agricultural product, in this case milk, from its origins in rural Latvia to a cheese vendor in the Netherlands.

MILK suggests a powerful vision of locative technologies that allow one to trace the origins of foodstuffs – a much sought-after ideal in this era of global mega-viruses – thereby making visible the networked society. I believe it was this reading of *MILK* that drew Bruno Latour to include the project in his ZKM exhibition Making Things Public.

To be fair, the *MILK* project's artists are not interested in Latour's reading, seeing their work more as a form of romantic landscape art. Indeed when making the project they came to a fork in the route that led in one direction to McDonalds and in the other to the Dutch cheese show, they chose the former. Nevertheless, Latour's reading is the one that interests me here

and I am looking at *MILK* as emblematic of that condition, regardless of the project's intent.

A different project at Latour's exhibition, *Issue Crawler*, suggests to me another dimension by which we could map the Network Society more effectively. *Issue Crawler* maps of the hyperlink structure around debates on the internet, allowing us to see all of the actors in a particular network and how they relate to one another, much as in a Mark Lombardi drawing. This potential project would, then, combine Issue Crawler's situational analysis with the locative analysis of *MILK*. Where *MILK* suggests a notion of space from here to there, *Issue Crawler* develops a more relative notion of location. To really determine one's "locativity" it would surely be necessary to consult both of these perspectives.

In a C-Theory article entitled 'Operational Media', Jordan Crandall speaks of the "resurgence of temporal and locational specificity witnessed in new surveillance and location-aware navigational technologies." This Minority Report vision of the future, of which we are constantly reminded by projects at MIT, is supposed to be one of smart objects with IP addresses communicating with us, with one another and with "everyone else". Here the question of location becomes crucial. My tracklog and my social network amount to a marketer's dream. To know where I am, is to know how to sell [to] me. This has led critics like Holmes and Crandall, to accuse locative media of being, in another critic, Andreas Broekman's terms, the avant-garde of the Control Society.

In Gilles Deleuze's essay 'Postscript on Societies of Control', the philosopher suggests that "[we] are in a generalized crisis in relation to all the environments of enclosure". Deleuze states "Enclosures are molds, distinct castings, but controls are a modulation... that will continuously change from one moment to the other". For Deleuze "The family, the school, the army, the factory are no longer the distinct analogical spaces"... "[E]veryone knows that these institutions are finished..." states Deleuze, "it's only a matter of administering their last rites..." According to Crandall, locative media is implicit in a "machine-aided process of disciplinary attentiveness, embodied in practice, that is bound up within the demands of a new production and security regime". Yet, Deleuze points out that we are no longer in disciplinary society. Moreover, in a society in which bounds and enclosures – such as the distinction between being inside or outside the system – are no longer distinct, Deleuze suggests, "there is no need to fear or hope, but only to look for new weapons".

But according to Bruno Latour: "'Things' are controversial assemblages of entangled issues, and not simply objects sitting apart from our political passions. The entanglements of things and politics engage activists,

artists, politicians and intellectuals. To assemble this parliament, rhetoric is not enough and nor is eloquence; it requires the use of all the technologies – especially information technology – and the possibility for the arts to re-present anew what are the common stakes". As a locative artist, I envision a practice of networked technologies that might convert Crandall's "machine-aided process of disciplinary attentiveness" into new civilian tactics.

http://interactive.usc.edu/members/mtuters/

• biogs

ambientTV.NET The interdisciplinary arts production company ambientTV.NET was founded in 1999 for the conception and production of critical artworks, events, and media projects. Projects typically draw together many genres, including electronic arts, dance, installation and cuisine. Techniques and effects of live data broadcasting and transmission provide the theme, medium and performative space for much of the work. Amongst its current productions is *Faceless*, a sci-fi film compiled from surveillance video footage recovered under the UK's Data Protection Act. The film explores urban fantasy and subjectivity under the regime of closed circuit TV, personal stereo and the multitude of ways one now leaves data-traces and is tracked through the city.
http://www.ambientTV.NET

Dr. Richard Barbrook was educated at Cambridge, Essex and Kent universities. During the early 1980s, he was involved in pirate and community radio broadcasting. He helped to set up Spectrum Radio, a multi-lingual station operating in London, and published extensively on radio issues. In the late 1980s and early 1990s, Richard worked for a research institute at the University of Westminster on media regulation within the EU. Some of this research was later published in *Media Freedom: the contradictions of communications in the age of modernity*, Pluto Press, London, 1995. Between 1995 and 2005, Richard was coordinator of the Hypermedia Research Centre at the University of Westminster and course leader of its MA in Hypermedia Studies. In 1997, he was one of the founders of cybersalon.org and is now one of the directors of the Cybersalon trust. At present, Richard is a senior lecturer at the School of Media, Art & Design at the University of Westminster. In collaboration with Andy Cameron, he wrote 'The Californian Ideology' which was a pioneering critique of the neo-liberal politics of *Wired* magazine. In the late-1990s and early 2000s, Richard has written a series of articles exploring the impact of the sharing of information over the Net, including 'The Hi-Tech Gift Economy' and 'Cyber-communism'. In 2005, he completed *Imaginary Futures* – a book about how ideas from the mid-twentieth century shape our early-twenty-first century conception of artificial intelligence and the information society. A selection of Richard's writings is available on the Imaginary Futures website **http://www.imaginaryfutures.net**

Sabeth Buchmann is an art historian and art critic. She is professor for History of Modern and Post-modern Art at the Academy of Fine Arts, Vienna. She is completing a research project on film, the avant garde and biopolitics at the Jan van Eyck Academy in Maastricht (with Helmut Draxler and Stephan Geene). She is the author of various publications on art, media and cultural theory.

Ruth Catlow and Marc Garrett are co-directors and co-founders of Net Arts collective Furtherfield.org (founded in 1997) – an independent, online platform for the creation, promotion and criticism of adventurous net art and networked media artwork for public viewing, interaction and participation. It is the collective work of artists, programmers, writers, activists, musicians and thinkers from around the world. They have also set up HTTP [House of Technologically Termed Praxis], a gallery that sites activities, events and exhibitions which focus on networked, participative and collaborative works simultaneously in physical and digital space. This Furtherfield initiative was set up in 2004 in North London to explore the potential of current networked technologies to promote distributed creativity. In her own work, Ruth Catlow is an artist. She has participated in exhibitions at The Baltic, Gateshead , CCA, Glasgow as well as galleries in Zagreb and Madrid. Ruth is Associate Senior Lecturer in Digital Media at Ravensbourne College of Design and Communication where she is also studying for an MA in Networked Media Environments. Marc Garrett is a net/media artist, curator, writer, street artist, activist, educationalist and musician.

Since the 1980s, he has used platforms such as the streets, pirate radio, net broadcasts, BBS systems, performance, intervention, events, pamphlets, warehouses and gallery spaces. In the early nineties he was Co-Sysop (systems operator) with Heath Bunting for Cybercafe BBS.

Dooeun Choi is the curator of Art Center Nabi, which opened in 2000 as the first media art centre in Seoul, Korea. Since 2000, she has worked on various projects related to interactive installations, online projects, wireless arts and locative media. In 2000, she organized the first telematics event with Roy Ascott and Korean artists as the special opening event of Art Center Nabi. In 2002, she produced a wireless art project called *Watch Out!*, which was a commissioned project proposed by Maurice Benayoun. She also organized the 'Wireless Art Competition' in 2003 with the Resfest Digital Film Festival. Since 2003 she has run a mobile gallery called '?gallery' on the SK Telecom mobile service June. Currently, she is running an art blog project called *love virus* which launched at **http://paper.cyworld.com/love** in 2004. She is also working on a locative media project which will launch at the end of 2005 and change Seoul city to a playground of storytelling. She was also invited as art director for the 2003 Uijeongbu International Digital Art Festival in Uijeongbu,

Michael Corris, an artist and writer on art, is Professor and Head of the Department of Art and Photography at the Newport School of Art, Media and Design, University of Wales, Newport. During the early 1970s, Corris worked with the Conceptual art group, Art & Language, in New York. With Mel Ramsden, Joseph Kosuth, Sara Charlesworth and others, Corris was a founding editor of *The Fox*, an artists-run journal that addressed itself to the political and social dimensions of contemporary artistic practice. Following the demise of Art & Language in New York, Corris continued his practice, dividing his energies between the production of artist's books inspired by typographic design, lecturing and writing on contemporary art and art theory. As a member of Art & Language and as an individual artist, Corris's work has been exhibited internationally and is part of the permanent collection of the Museum of Modern Art (NY), the Whitney Museum of American Art (NY), the Victoria and Albert Museum (London) and the J. P. Getty Museum (Los Angeles). Since 1990, when Corris immigrated to the United Kingdom to take up a full-time teaching post, he has concentrated on writing and researching late-modern and contemporary art. His art criticism has been widely published in *Art Monthly*, *Artforum*, *FlashArt*, *Art History*, *art+text* and *Mute* and has been included in several collections, most notably Alex Alberro and Blake Stimson, eds., *Conceptual Art: A Critical Anthology,* MIT Press, and John Roberts, ed., *Art Has No History!*, Verso Press. Corris' most recent publications include *Conceptual Art: Theory, Myth and Practice,* Cambridge University Press, 2004, a monograph on *David Diao*, TimeZone8 Books, Beijing, forthcoming 2005, *Ad Reinhardt,* Reaktion Books, London, forthcoming 2006, and with Pauline van Mourik Broekman, Josie Berry Slater and Simon Ford, *White Cube Blue Sky, A Mute Reader,* The MIT Press, Cambridge, MA, forthcoming 2007.

Neil Cummings is Reader in Theory and Practice at Chelsea College of Art and Design. He has been collaborating with his partner Marysia Lewandowska since 1995. They have worked with museums, banks, galleries, archives, places of education and department stores in London, Geneva, Copenhagen and Paris. They have explored the entanglements of art and capital in 19th century Manchester and researched trafficking and smuggling of surrogate goods on the Polish Ukrainian border; documented lost property recovered by London Transport in a single day and impersonated a famous art dealer. Their projects, although diverse, have consistently engaged with the cultural institutions that designate and mediate the increasingly devolving experience of art to their publics.

Rasmus Fleischer is a Stockholm based researcher, freelance writer and musician. He has a special interest in media history, digital culture and questions about copying and copyright, and was one of the founding members of piratbyran.org.

Mary Anne Francis was one of the organizers of Open Congress as part of the Critical Practice Research cluster at Chelsea College of Art and Design, London, where she is Research Fellow in Critical Practice. She is also Course Leader of the BA (Hons) Critical Fine Art Practice at the University of Brighton, an artist and a writer. Across these practices, she has been concerned with the reciprocal conditions of the social-in-the-artist (and in particular, the notion of the artist as a multifarious agent) and the artist in the social, as identified with recent participatory, collaborative and 'post-autonomous' activities.
http://www.chelsea.arts.ac.uk/17224.htm
http://www.brighton.ac.uk/arts/research/3_0_research_activity/3_2_0_research_staff/3_2_14_francis_mary_anne.htm
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Mary Fee is the co-ordinator of LETSLinkUK **http://www.letslinkuk.org**. She has been an active organiser in the local currency movement for 20 years.

Matthew Fuller is currently Reader in Media Design at the Piet Zwart Institute, Willem de Kooning Academie, Rotterdam where he works on the MA in Media Design **http://www.pzwart.wdka.hro.nl**. He is the author of *ATM*; *Behind the Blip, essays on the culture of software*; *Media ecologies,materialist energies in art and technoculture* and the forthcoming pamphlet published by Digital Research Unit Huddersfield, *Softness: interrogability; general intellect; art methodologies in software*. He is a regular collaborator with the artists group Mongrel: **http://www.mongrelx.org**.

Johanna Gibson works at the Queen Mary Intellectual Property Research Institute, University of London. She holds degrees in cultural and critical theory, animal sciences and law, and before moving to the UK was in commercial legal practice in Australia. She has published widely on intellectual property and development, traditional knowledge, cultural diversity, and creativity, and is the author of the book *Community Resources: Intellectual Property, International Trade and Protection of Traditional Knowledge* Ashgate 2005. Her next book, *Creating Selves: Intellectual Property and the Narration of Culture*, will be published later this year and examines the construction of creativity within intellectual property laws and civil society debate. **j.gibson@qmul.ac.uk**

Greenman (sometimes known as Peter Brownell) is a bit of a big mouth. He will often pretend to be some kind of philosopher-artist-programmer, but rarely succeeds. He aspires to, one day, become a complete fool.

Robert Horvitz is the founder and Executive Director of the Open Spectrum Foundation (OSF), with offices in Prague and Amsterdam, which works to increase public access to license-exempt radio bands, particularly in emerging democracies. Robert helped publicize the development of "packet radio" as co-host of CompuServe's HamNet Forum in the early 1980s (packet radio evolved into the many flavours of wireless internet). He wrote extensively about "spectrum politics" and reported on that subject for Radio Netherlands, eventually becoming the

head of the Association of North American Radio Clubs. He moved to Europe and became the Soros Foundations' Regional Radio Consultant in 1992. Until recently, he was on the management team of the Global Internet Policy Initiative. OSF monitors the reform of radio regulations around the world, providing reports about the practicality of license-free bands and how widespread they are. OSF works with regulators, equipment vendors and local activists to hasten the day when the licensing of radio devices will seem as unnecessary as "selling sound waves to people who would like to have a conversation".

Samantha Hunt is a writer and artist from New York. Her stories have appeared in *McSweeney's*, the *New Yorker*, *Cabinet*, *Seed Magazine* and on the radio program "This American Life". Her play, "The Difference Engine", a story about the life of Charles Babbage, was produced last year. Hunt's artwork can be found at the New York Public Library. She teaches writing at Pratt Institute in Brooklyn. Hunt's first novel, *The Seas*, was published in November 2004.

Adam Hyde is an artist with an international practice who works with software, wireless mediums, online audio and video, sound art, new technologies and more traditional forms of broadcast. He has managed the radio stations Contact89FM (Hamilton, New Zealand) and 95bFM (Auckland, New Zealand), as well as establishing New Zealand's first community television station, Static TV. Adam has also worked at management level internationally at innovative web services such as Australia's Virtual Artists **http://www.va.com.au** and at the renowned XS4ALL (Amsterdam). Adam co-founded r a d i o q u a l i a **http://www.radioqualia.net** in 1998 with New Zealander Honor Harger. r a d i o q u a l i a works in the fields of art, science and technology. The principal interest of r a d i o q u a l i a is in the ways that broadcasting technologies such as radio and online streaming media can be used to create new artistic forms, and in ways that sound art can be used to illuminate abstract ideas and processes. In late 2002 Adam also started his own consultancy - The Streaming Suitcase **http://www.streamingsuitcase.com** - specialising in online audio and video training and system design for cultural institutions such as Tate Modern, the Walker Art Centre in Minneapolis, USA, SF MOMA, The Science Museum, the Foundation for Film, Art and Creative Technology (FACT) in Liverpool and Montevideo in Amsterdam. Adam has recently become a writer for the Open Source magazine *Free Software Magazine* **http://www.freesoftwaremagazine.com**, and now predominantly works as a freelance software developer, producer and artist, and has gained an international reputation for his work in these areas. Early in 2005 Adam was based in New Zealand on a four-month digital artist residency, followed by a programmers residence at mi2 **http://www.mi2.hr.**

Jon Ippolito is an artist, Guggenheim curator and co-founder of the Still Water program for network art and culture at the University of Maine. His 2006 book *At the Edge of Art*, co-authored with Joline Blais, surveys how the internet has knocked art off the gallery pedestal and into stock markets, court cases and bedrooms, asking what this seismic shift means for the definition of art.

Jamie King Dr. J. J. King lives in Hackney, East London. He is currently dividing his time between starting a media lab, teaching, writing for ITN/Channel Four, and attempting to work on a new novel about the non-existent field of radical neuroscience. **jamie@jamie.com**

Karel Kulhavy is the creator of Ronja. Ronja is a free technology project for reliable optical data links with a current range of 1.4km and a communication speed of 10Mbps full duplex. Applications of this wireless networking device include backbone of free, public and community networks, individual and corporate Internet

connectivity and also home and building security. High reliability and availability linking is possible in combination with WiFi devices. The Twibright Ronja datalink can network neighbouring houses with cross-street ethernet access, solve the last mile problem for ISP's, or provide a link layer for fast neighbourhood mesh networks.
For more information on Ronja, see **http://ronja.twibright.com/**
http://ronja.twibright.com/

Giles Lane founded Proboscis in 1994 and chairs the Board of Directors. He manages the company with Alice Angus and leads the SoMa research programme. Giles founded and edited the COIL Journal of the Moving Image between 1995 and 2000, and co-edited and published *Ghost Stories* by Pavel Buchler in 1999. He initiated, developed and produced "Mapping Perception" (a 35mm film, immersive installation book and CD-ROM) between 1998 and 2002, and conceived the DIFFUSION eBook format. Giles initiated and co-developed the Topologies initiative, which led to the establishment of the SoMa think tank in late 2000. In 2001 Giles founded the Peer2Peer Network and curated and produced Private Reveries, Public Spaces. He also commissioned and edited the DIFFUSION eBooks series, *Species of Spaces* (2002/2003). Giles is currently leading the development of the location-based wireless project, Urban Tapestries as well as consulting for clients such as IDEO, Arts Council England and NESTA.

Mike Lenczner is one of the founders of Ile Sans Fil – a Montreal community wireless group.

Francis McKee has worked previously as an historian of medicine for the Wellcome Trust and as Head of Programme at CCA (the Centre for Contemporary Art in Glasgow). Now a Research Fellow at the Glasgow School of Art and part-time Head of Digital Arts and New Media at CCA, he combines these jobs with freelance writing for artists such as Christine Borland, Douglas Gordon, Joao Penalva, Kathy Prendergast and Pipilotti Rist.

Tapio Mäkelä is a researcher and a media artist based in Helsinki, Finland. He is currently researcher at HIIT (Helsinki Institute for Information Technology) and m-cult, Finnish Centre for New Media Culture. Mäkelä was the programme chair of ISEA 2004, the 12th International Symposium of Electronic Art. He is working mostly on new media and cultural studies research as well as research driven media arts practice. Over the last decade, Mäkelä has presented papers at several international forums and been a visiting lecturer. In the years 1994-1997 Mäkelä was director of artist association Muu, where he established a medialab for artists, the MuuMediaBase. Mäkelä has also realized several net-based media cultural projects. He has also been involved in Finnish open source and IT development as well as the Helsinki electronic music scene. With m-cult he has also worked with new media arts and culture policy research resulting in three publications.

Armin Medosch is a writer, artist and curator. From 1996 to 2002 he was co-editor-in-chief of the award- winning international online magazine *Telepolis* **http://www.telepolis.de**. He has edited and contributed as a writer to many books, amongst them *Netzpiraten* (2001) and *Freie Netze* (2003) (both books are in German language only). In 2004 he investigated climate change and social mapping with the Ports project **http://scansite.org/ports** as a part of the Ninepin residency by Scan Network. Together with Shu Lea Cheang and Yukiko Shikata he is initiator of the floating online platform <KOP> **http://kop.kein.org** which presented the ongoing Commons Tales research project at the NTTICC exhibition OpenNature, Tokyo, in 2005. Currently he is

working on a new book on the relationship between media art, net art and the free software and open source movement. Based in London since 1997, he is associate senior lecturer in digital media at Ravensbourne College Postgraduate Programme.

Brett Neilson is senior lecturer in the School of Humanities at the University of Western Sydney, where he is also a member of the Centre for Cultural Research. He is author of *Free Trade in the Bermuda Triangle ... and Other Tales of Counterglobalization*, University of Minnesota Press, 2004.

Matteo Pasquinelli has been based for years in Bologna (Italy) where he contributed to launching several media projects, from Luther Blissett to Indymedia Italia to Telestreet. He is author of the book *Media Activism*, Derive Approdi, Rome, 2002, and co-curator together with Geert Lovink and Katrien Jacobs of The Art and Politics conference in Amsterdam **http://www.networkcultures.org/netporn**. He is also editor of the Rekombinant mailing list and webzine, an influential Italian-speaking forum about contemporary philosophy, media theory, and creative avant-gardes **http://www.rekombinant.org**. Currently he is based between London and Barcelona. **mat@rekombinant.org**

Toni Prug is studying sociology at Goldsmiths College, London. He is working as a network operations engineer. He occasionally writes free software, and works on theory of organizations.

Kate Rich is an artist & trader based in Bristol. She is known to work for the Bureau of Inverse Technology (BIT).

Ned Rossiter is a senior lecturer at the Centre for Media Research, University of Ulster and an adjuct research fellow at the Centre for Cultural Research, University of Western Sydney. Ned is also a co-facilitator of fibreculture, a network of critical Internet research and culture in Australasia **http://www.fibreculture.org**.

Trebor Scholz works both collaboratively and individually as an artist, media theorist, activist and organizer. His interests focus on collaboration in media theory, art and education. In 2004 Scholz founded the Institute for Distributed Creativity, iDC **http://www.distributedcreativity.org** that investigates the emerging field of cooperation studies. In 2005 the Institute organized Share, Share Widely, the first large conference about media art education **http://www.newmediaeducation.org** at the CUNY Graduate Center. In April 2004, together with Geert Lovink, he organized the conference Free Cooperation on the art of (online) collaboration, held at SUNY Buffalo **http://www.freecooperation.org**. Scholz has written on media art, networks, education and participatory cultures for many periodicals such as *Art Journal*, fibreculture Journal, *Afterimage* and C-Theory. He has contributed essays to several books and co-edited *Free Cooperation: The Art of (Online) Collaboration* forthcoming with Autonomedia. **http://collectivate.net**

Felix Stalder (*1968) is a lecturer in media economy at the Academy of Art and Design, Zurich [1] and a managing partner of Openflows [2]. He is also one of the long-term moderators of nettime [3], an international mailing list for critical theories and practices of networked cultures. He is currently based in Vienna, where he co-organized several conferences and edited newspapers with Netbase, the Institute for New Cultural Technologies.[4] He has published and lectured extensively on a wide-range of issues

relating loosely to the political economy of networked technology [5]. His recent books are *Open Cultures and the Nature of Networks* (2005) and *Manuel Castells, Theory of the Network Society* (Polity Press, 2006). He lives together with Andrea Mayr, and Selma Viola.

[1] **http://www.snm-hgkz.net**

[2] **http://www.openflows.org**

[3] **http://www.nettime.org**

[4] **http://www.netbase.org**

[5] **http://felix.openflows.org**

Tim Stott completed a BA (hons) in Drawing and Painting in 2003, and an MSc in Contemporary Art and Critical Theory, both from Edinburgh College of Art. He has had essays published in *Variant*, *Printed Project*, *Circa* and *The Future*. He currently works part-time at the National Gallery of Ireland and Dun Laoghaire Institue of Art, Design and Technology. He lives in Dublin.

Lewis Sykes is a digital arts and new media producer, interaction designer and musician. He coordinates Cybersalon, founding artists in residence at the Science Museum's Dana Centre and organisers of Cybersonica, the international festival of music, sound and technology. He is also a partner in the interactive media agency, Chillifish.net and a member of the experimental audiovisual collective, The Sancho Plan. Lewis studied on the MA Hypermedia Studies, Westminster University, 1999-2000 and is a qualified Youth & Community Arts worker. Through mixing commercial and voluntary work and play, he continues to explore and refine his interests and skills in music, interactivity and technology.

Taxi_onomy is a live art project and mobile cartographic endeavor by architect Celine Condorelli and artist Beatrice Gibson. It re-appropriates the taxicab as the ultimate vehicle for psycho-geography, based on its capacity for metro processing and spatial understanding. Taxi_onomy is inherently concerned with facilitating spatial authorship. It functions as a live cumulative archiving device that enables the public to log, classify and order their environment, creating networked cognitive maps while overlaying them onto physical space. Part locative dictionary, part annotation tool, Taxi_onomy offers a radical and high-quality art tool for the general public to both engage and create with. Devised as a socially interventive navigation device for a networked society, the project generates a reconsideration of existing use, appropriation and relationship to place.

Julian Todd lives in Liverpool and writes machine tool software when he thinks he should be working. He holds a PhD in Mathematics, so knows what doing hard thinking just for its own ends really means. In recent years he has helped to map caves in China, Austria and Yorkshire, which is a very ridiculous thing to do.

Palle Torsson is a Stockholm based artist, researcher and organizer and holds an MFA in Fine arts. He has been a pioneer working with internet, game culture and intellectual property related works from the mid-nineties. Among other things he runs the site artliberated.org in collaboration with piratbyran.org.

Agnese Trocchi Artist, writer and videomaker based in Rome, Italy, Agnese Trocchi has been active in the field of visual media and communication technologies since 1995. She has been involved in several experiences with

grassroots media bbs, television, internet and satellite broadcasting in a self-managed and independent context in Italy and in Europe. She is co-founder of CandidaTV, **http://www.candidatv.tv**. She collaborates with the video archive and distribution project NewGlobalVision **http://www.ngvision.org** and in the telestreet network **http://www.telestreet.it**.

Marc Tuters is a researcher in new media. He holds a degree in Cinema and a graduate degree in Media Studies and is currently working on another graduate degree in Interactive Media. For the past several years Marc has produce numerous collaborative art/science projects and coordinated events for international new media festivals. Over this period he was also involved in establishing a series of cross-disciplinary research networks internationally, which examine social and creative aspects of wireless, including: the Locative Network in Latvia, the Mobile Digital Commons Network in Canada and the PLAN Network in the UK. Marc now works as a research fellow at the University of Southern California's Annenberg Centre in Los Angeles.

Marina Vishmidt is a researcher and writer based in London, originally from New York. Her current interests extend to art and economy, conceptual art, the subjective constitution of political activity, minor articulations in film and writing and materialist theory.

Jo Walsh is a free software hacker, writer and self-appointed organiser whose interests lie in the intersection of bots, the semantic web, geospatial standards, wireless networks and transport planning. With support from the Open Knowledge Foundation, she makes efforts to raise awareness about access to information issues.

Simon Yuill is an artist based in Glasgow, Scotland. He is currently working with Free Software and ideas of autonomous social structures through projects such as 'spring_alpha', described here, and 'YOUR MACHINES'. He is also involved with the free media labs at the Chateau Institute of Technology (Glasgow, Gorbals) and Radius (Glasgow, Southside), and the Glasgow OpenLab group. He has written about histories and cultures of coding including notational aesthetics in Arab-Islamic art and the links between code systems and the self-legitimization of practitioner communities within free-improvisational music and FLOSS. 'spring_alpha' is supported by the Netherlands Institute for Media Art, the Piet Zwart Institute, the Media Centre (Huddersfield), Alt-W, Scottish Arts Council National Lottery Fund with the University of Abertay and New Media Scotland.