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'CONSTRUCTIVE INSTABILITY', OR: THE LIFE OF THINGS AS THE CINEMA'S AFTERLIFE?¹

THOMAS ELSAESSER

The Historical Avant-gardes: Shorten the Distance between Art and Life?

One of the driving forces of the historical avant-gardes – Futurism, Dada, Surrealism, Russian constructivism – according to Peter Bürger's influential theory, has been to 'reintegrate art into the practice of life', partly as a reaction to aestheticism and partly to counter the anti-technological stance of *l'art-pour l'art*-modernism. Embracing 'the new' and 'the contemporary' – and following Rimbaud's advice: '*il faut être absolument moderne*' – avant-garde artists aimed to shorten the distance between 'art' and 'life': usually in the form of group activism, including staged happenings, but also individual acts involving serendipity and contingency, while making coincidence productive of meaning. Key techniques were montage and collage, assemblage and collision, i.e. the combination of seemingly unrelated elements or materials. In literature, individual intentionality was short-circuited by automatically recording contiguous associations, borrowed from psychoanalysis or games of chance. For the surrealists, 'life' entered the artwork when the banal, the ephemeral, the overlooked and the everyday could be incorporated into canvas or text, but verbal and physical attacks on the institution of art itself also formed part of tearing down the barriers. Instead of claiming autonomy for the individual work, or examining the specificity of the artistic medium, the artist practiced 'displacement': a change of place and context defined what was to make an object into an art-work, and an openness to chance gave an act its authenticity, rather than the search for sincerity and personal expression. The most famous art-object of this kind was Marcel Duchamp's Urinal, and the most infamous provocation was the assertion by André Breton, that the aesthetic act par excellence was to go down into the street and shoot off a pistol randomly into the crowd.

Several kinds of objections/revisions have been raised about this definition of the avant-garde as being informed by the desire to 'bring art closer to life'. One is that the political implications of this form of agency and of 'life-as-a-work-of-art' have to be seen in their broader historical context, which often meant that tacit support was lent to reactionary movements, from the dandy anti-humanism of Wyndham Lewis' Vorticism in London and of Ernst Jünger's poetics of the cold eye in Weimar Germany, or endorsing undemocratic politics or anti-egalitarian values as supported by avant-garde artists in Italy, Spain, Germany and the Soviet Union during the 1930s.

Jacques Ranciere, for instance, has argued that 'art-for-art-sake' proved a better defence against totalitarian temptations than avant-garde activism, although neither autonomy nor

1. © Thomas Elsaesser, 2008

the fusion of art and life can rescue the hoped-for subversive potential of art, because each involved what he calls a 'double heteronomy':

Whether the quest is for art alone or for emancipation through art, the stage is the same. On this stage, art must tear itself away from the territory of aestheticized life and draw a new borderline, which cannot be crossed. This is a position that we cannot simply assign to avant-garde insistence on the autonomy of art. For this autonomy proves to be in fact a double heteronomy. [...] The 'autonomy' of the avant-garde work of art becomes the tension between two heteronomies, between the bonds that tie Ulysses to his mast and the song of the sirens against which he stops his ears.²

The second objection to Bürger's thesis concerns the role played by technology for the historical avant-garde, and in particular that of the technical media – that is photography, film, and sound recording. Dietrich Scheunemann noted that there was a danger of 'underexpos[ing] the significant role, which the new means of technical reproduction played in bringing about the revolutionary changes in artistic techniques. Brushing aside technological considerations as formulated with great clarity and far-sightedness in several essays by Walter Benjamin, [Bürger's *Theory of the Avantgarde*] failed to notice that the advent of photography and film had caused the storm in the ensemble of the arts and that the re-grouping and vibrant interaction between the old and new art-forms provided much of the driving force for the radical changes in the landscape of the arts'.³

The third counter-argument, offered among others, by Benjamin Buchloh,⁴ has been that Bürger's theory leaves no space for the so-called (New York) neo-avant-gardes of the 1950s and 1960s, which in his account appear as mere nostalgic reprise and warm-up of the failed objectives of the first or 'historical' avant-gardes.⁵ This seriously underestimates the major achievements of minimal and conceptual art, or the degree to which modern art in the 20th century quite generally has worked with allegorical or semiotic, as opposed to iconic or representational modes, the only ones considered when 'art' and 'life' are conjoined and interrelated in this way.

I want to add a further consideration and suggest that at the turn of the 21st century, life and art have, on the contrary, come too close together, leaving the avant-garde with the task of repositioning both 'art' and 'life'. More specifically, against the background of renewed concerns with 'life' (bios and zoe) as reflected in the topical yet often contradictory debates

2. Jacques Ranciere 'The Aesthetic Revolution and its Outcomes', *New Left Review* 14, March-April 2002, 137.

3. <http://www.arts.ed.ac.uk/eurogstudies/rprojects/avant-garde/TheoreticalBasis.htm>

4. Benjamin H.D. Buchloh, review of Bürger, in: *Art in America* vol. 72, no. 10 (November 1984): 19-21.

5. 'Arguing persuasively against Peter Bürger's view of the avant-garde as failed and the neo-avant-garde as recuperative by positing the importance of *Nachträglichkeit*, Foster traces this 'deferred action' of the historical avant-garde from minimalism, pop art, and the textual turn in conceptual art to 'The Return of the Real' and 'The Artist as Ethnographer', the two chapters of his book that deal most explicitly with the art of the present', Douglas Crimp.

around bio-power, bio-politics and the condition of the post-human, it is Ranciere's 'double heteronomy', as a mutually conditioned 'outside determination' that defines the relations between art and life, rather than straight oppositions or binaries. In other words, 'art' and 'life' are both coming under pressure from external forces, but in such a way that they seem to be mutually refiguring each other.

This has consequences for the place one assigns to the 'media technologies' just mentioned, the unnamed 'other' whose structuring absence has so often marked the avant-gardes' self-understanding and modes of action. Instead of modern painting's more directly antinomic relation to photography, the historical avant-gardes often embraced the technical media, without reconciling themselves to their social implications. If on the side of a 'fusion' with life, the Russian constructivists saw themselves as engineers and their art as part of the machine of modernity (which soon swallowed them up), Arnold Schönberg's music, on the side of 'autonomy', was able to denounce the capitalist division of labour only by taking that division even further: 'to be still more technical, more 'inhuman' than the products of capitalist mass production'.⁶ Mass production and technical media would here be part of those outside forces re-appearing inside, so that neither their embrace, nor their rejection releases the avant-garde from this heteronomy whose effects undermine the very polarity that the avant-gardes set out to bridge. My thesis would be that the effects of such double heteronomies are still with us, albeit in different configurations. Today it appears that 'art' and 'life' are neither opposed to each other, nor have they merged; rather, they have changed places in relation to the outside forces that once more determine their antagonistic relation to each other. But what are these outside forces, other than the 'untranscendable horizon' of capitalism?

Let us begin on the side of 'life'. One of the developments of the latter half of the 20th century has been that life does indeed look more like art, and this in three distinct ways; firstly, in the Western world, everyday life has in almost all its aspects fallen under the regime of style, usually seen as the consequence either of a relentless aesthetisation (to use a Benjaminian term) or of commodification (to use the Marxist term). But in the form of design, this will to style has become much more than either aesthetisation or commodification: it has become the very term of our self-determination and self-reference as individuals and as political collectives: we want to take control of our life by giving it shape and design, not just by 'preserving it' as long as possible, but to improve, maximise, optimise it. Continuing in the same Foucauldian vein, one might say: the 'care of the self' is increasingly reformulated as the 'care of the future self' - a forward-looking venture that converts personal ethics into a kind of self-'serving' entrepreneurialism (to which the idea of a *res publica*, a public space, has been sacrificed), so much so that the 'business' of government in many Western countries seems to consist of virtually nothing else but health reform and pension rights.

Secondly, this notion of design, coupled to the concept of engineering, is a pervasive force not just in the sphere of 'social engineering', 'planning' or personal life-style choices: the so-called life-sciences (biology, anthropology, molecular genetics) are obliging us to rethink our

6. Ranciere, *loc. cit.* 137.

understanding of 'bios' (the individual life and its finitude) and 'zoe' (the natural life with its cycles) not as an opposition but in terms of a double heteronomy. The forces operating on both are now those usually associated with engineered or constructed environments and of technological systems, while biological processes (including death itself) become increasingly available as 'technologies' in the development of new materials or in the research and manufacturing cycles of industrial products.⁷ Organ transplants and tissue grafts have become standard medical practice, while enzymes or proteins are grown and harvested as the 'building blocks' for new products, while plants and other naturally occurring organisms are patented and trade-marked.

Even without going into more details about biological engineering, genetically manipulated food or nano-technologies, it has become another commonplace to note that the nature/culture divide, in many of the traditional definitions, no longer applies. To quote one of the many programmatic statements on this subject: 'If today there is a feeling of particular urgency for re-engaging with this dichotomy [of nature and culture], it is in part prompted by the revolutionary developments in science, particularly in biotechnology, medicine, neurobiology, and artificial intelligence. Strange life forms such as clones, transplants, genetically modified crops, etc. do much more than challenge the opposition between nature and culture: they establish a praxis that ... implodes a dualism that not so long ago was conceived as unsurpassable. How is one to decide whether these life forms are on the side of culture or nature?'

The Post-Human, Knowledge and the Prospect of A Contemporary Avant-garde

Another, more specifically Anglo-American horizon of this thinking about the collapse of the nature/culture divide and its associated models of progress, enlightenment and linear evolution is the condition of the post-human. Definitions of the post-human vary, but a useful checklist might be something like this: First, the post-human privileges informational pattern over material instantiation, so that embodiment in a biological substrate (such as our bodies) is seen as an accident of history rather than an inevitability of 'life'. Second, the post-human considers consciousness, regarded as the seat of human identity in the Western tradition long before Descartes' *cogito*, to be an epiphenomenon, an evolutionary upstart trying to claim that it is the main event when in actuality it is only a minor sideshow. Third, the post-human thinks of the body as the original prosthesis we all learn to manipulate, so that extending the body or replacing body-parts with other prostheses becomes a continuation of a process that began before we were even born. Fourth, and most important, the post-human view configures human beings so that they can be seamlessly articulated with intelligent machines. In the post-human, there are no essential differences or absolute demarcations between bodily existence and computer simulation, between cybernetic mechanism and biological organism, between robots running on programmes and humans pursuing goals.

One of the implications of such a post-human horizon is that not only the practice, but the idea of art – whether as a medium or even of art as a 'technology' – will all but disappear.

7. The historian Hughes P. Thomas, defines the term technology as a '...creative process involving human ingenuity ...'. This approach to technology associates technology with art and, by extension, aesthetics. (Hughes P. Thomas, *The Human Built World*, 2004).

Even the concept of 'medium' will be expendable, so that, for instance, notions like 'cyber-space' will become as quaint, and 'virtual reality' as obsolete as the idea of an ether – which, so dominant in the late 19th century, became obsolete at the beginning of the twentieth once the properties of electromagnetic fields and of radio waves became common knowledge. Computers and chips will leave their metal boxes and screens, and embed themselves in just about every object we come into contact with and just about every environment we find ourselves in. Human-computer interfaces, now still modelled in most cases around our presumed familiarity with the cinema (the screen), with the book (the laptop) or the office desk, will increasingly model themselves around our primary perceptual organs and senses, that is: sight, hearing and touch, and thus also become 'transparent'. The sudden passion for the 'haptic' in the humanities, and the hype around the Apple I-phone are (contrary to claims about 'embodiment') indicative of the same post-human trend. As N. Katherine Hayles argued some years ago: 'What [...] is already happening, is the development of distributed cognitive environments in which humans and computers interact in hundreds of ways daily, often unobtrusively.' In the terminology of Marcus Novak, quoted by Hayles, we are moving from 'immersion' (our old-fashioned cyberspace) to 'eversion' (localized virtual reality environments, like wifi hot-spots or other information-rich niches).⁸

If Bürger is right, and the avant-gardes did aim at fusing art and life, and if Katherine Hayles is right about the seamless fusion of humans and machines, then it could be argued that in the mutual interpenetration (or the double heteronomy) of art and (media) technology, as well as (media) technology and life, the avant-garde's aspirations have fulfilled themselves with a vengeance, to the point of making the very possibility of an artistic avant-garde obsolete. In other words, the post-human position implies a more or less smooth alignment between bios and techné, and thus it operates with an adaptationist model of evolution. However, there is hope: according to many of the recent studies of evolutionary biology (signed by such notable figures as Francisco Varela, Thomas Metzinger, as well as Antonio Damasio and Daniel Dennett), this smooth transition model is too large an assumption to make.⁹ As Slavoj Žižek puts it, in his review of the debate on evolutionary biology, adaptation and the birth of consciousness, human beings are constitutively un-adapted.¹⁰

In other words, the obsolescence of art and the avant-garde may not be an inescapable conclusion to the post-human position. Yet surely any project of an avant-garde for the 21st century is obliged to reflect on the definition not only of art and life, both of which now stand under the sign of techné, but this techné needs itself to be refigured around

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8. 'Computers aren't just in boxes anymore; they are moved out into the world to become distributed throughout the environment. 'Eversion,' my colleague Marcus Novak has called this phenomenon, in contrast to the 'immersion' of the much more limited and localized virtual reality environments.' N. Katherine Hayles, in conversation with Albert Borgman on *Humans and Machines*. <http://www.press.uchicago.edu/Misc/Chicago/borghayl.html>
9. 'A living system resolves its problems not simply by adapting itself through modifying its relationship to its milieu, but rather through a process of self-modification in which it creates new structures that mediate its connection with the environment.' Hugh P. Thomas, loc. cit.
10. Slavoj Žižek, *The Parallax View*. London: Verso, 2006, 150-200.

the notion of artifice as a practice situated between design, engineering and programming: life becomes more 'artificial' by being understood to be both engineered and programmable, which raises an interesting prospect and may even hold out a promise: namely, the possibility that art will become more life-like (in the sense of emulating reproduction, generation, replication, mutation, chance and contingency), in order to remain 'art'. This is what I meant by my speculation that art and life might be about to change places, under the condition of their mutual, outside determinations.

Consider a similar situation in the area of knowledge production and cultural memory: the post-human perspective implies the notion of a self-organizing intelligence, of a bottom-up aggregation of knowledge, whether in the form of 'tacit knowledge', smart mobs or 'swarm intelligence'. With the Internet an everyday reality, these concepts, which had previously been mostly in the realm of the speculative endeavour of experts ('six degrees of separation') became a practical reality: for instance, the wiki-principle of user-generated and user-regulated content, most notably in the form of a summary of knowledge on a wide range of topics – assembled on the Wikipedia sites, and with links to all kinds of specialized sources of knowledge and reference – gave hundreds of thousands of people their first experience of the practical value of the internet to their lives, in the aggregation and access of information and knowledge. And yet, voices that question the efficiency and feasibility of this 'bubble-up' or 'bubble-sort' method of acquiring, adjudicating and policing knowledge have become quite loud in recent times, and not only from those quarters who might be suspected of having their own motives in retaining the '*ancien regime*' privileges of monopolies and titles. Jaron Lanier, himself once a guru and hacker-hero of the first Internet generation, has spoken out against what he calls 'digital Maoism', by which he specifically targets Wikipedia and other 'creative commons' initiatives.¹¹ And we could all contribute anecdotes that prove how unreliable a Google search can be, not to mention how dependent we still are on the fast eroding standards of investigative journalism, when we want to know what is 'really' going on in the world.

Human-Machine Systems: Instability and Fallibility as Evolutionary Advantages

Does the same sense of de-professionalization haunt the sphere of art and aesthetic production? If the principles of art and life coalesce or converge around replication and repetition, self-regulation and aggregation, what kind of an avant-garde can make its home on the Internet? In short: Can an avant-garde be a swarm phenomenon, or vice versa, can a 'smart mob' or 'the hive mind' become avant-garde?

In order to answer this question, I propose to conduct an experiment. The aim of this experiment is to test the very hypothesis I am starting with, namely that replication and copy, 'accident' and contingency, are generating life-like processes and cycles in the sphere of the media and media-art, which it is worth trying to understand in their own dynamics, as well as in their wider implications: in this case, how they impact, or might be made productive for, the self-understanding of a contemporary avant-garde. My contribution, in the first instance, is thus aimed at a conceptual clarification and a terminological shift, whereby part of our

11. Jaron Lanier, 'Digital Maoism', *Edge Third Culture*, http://www.edge.org/3rd_culture/lanier06/lanier06_index.html

common and current vocabulary derived from modernism and postmodernism, can be re-tooled and updated, in light of bio-politics and the post-human,¹² while also taking account of more specific media phenomena and media applications, such as the Internet, search engines and so-called social networking.

Besides heteronomy, to which I shall return, I want to introduce another concept, which appears in my title: that of 'constructive instability'. Its engineering provenance has been overlaid by a neo-con political usage, for instance, by Condoleezza Rice when she called the deaths among the civilian population and the resulting chaos during the Lebanon-Israel war in the summer of 2006 the consequence of 'constructive instability'. What draws me to constructive instability is not the implicit cynicism of Rice or the Bush Administration's use of the term, but the idea that 'failure' has a place in the narratives of adaptive, 'dynamic' or emergent situations, for one of the points often made about self-regulatory systems is that they are inherently unstable. As indicated, very real concerns exist about the kind of agency and control handed over by individuals and collectives, when 'intelligent systems' run so much of everyday life, in the areas of medicine and government, in the conduct of modern warfare and of financial transactions. Information systems such as they proliferate today are considerably more fallible than is usually realized, as can be seen from electricity power-station failures, the gridlock chaos that ensues when in a large city the traffic lights are down, or the knock-on effects that come from a local disturbance in the international air-traffic systems. Of course, the internet was conceived and built precisely in order to minimize such domino-effects typical of linear or top-down forms of communication and exchange, but volatility on the stock-exchange or damage to underwater cables highlight that even the famed package distribution system is neither invulnerable nor risk- and accident-proof.

Mindful of this fragility and fallibility of both humans and machines, I want to posit the structural value of factoring in 'failure': not as a negative feature that needs to be eliminated, but as the very point where potential failure can be seen to be productive. A specific example of such productivity, or rather where potential failure is a special engineering feature are some of the USA's advanced fighter planes such as the X-29, which were designed in such an aerodynamically unstable fashion that not only could they not be piloted by humans alone (which of course is to a lesser extent already true of many commercial transatlantic airlines or jumbo jets): they became extremely dangerous at most normal aircraft speeds: 'In the early 1980s, the United States Air force was testing an experimental fighter called the X-29. The unusual feature of this aircraft was that its wings were swept forward rather than back. This configuration is aerodynamically unstable so the plane required a triply redundant computer monitoring system that checked the plane's motion 40 times per second and made constant

12. Terms such as pastiche, parody, palimpsest, belonging to the vocabulary of post-modernism, but also such classically modernist terms as reflexivity, self-reflexivity and mise-en-abyme – with their provenance in literature and fine arts – are widely felt to no longer possess the relevant precision for grasping the present situation; but I also suspect that a number of more recent coinages, such as appropriation or remediation, or the terms beginning with trans-: translation, transposition, trans-national – not to speak of multi-mediality, inter-mediality, hybridity or in-between-ness – may also have a hard time surviving, when applied to contemporary media phenomena.

control adjustments necessary to keep it on course. If this system were to fail for even one-quarter of a second, the X-29 would have tumbled out of control. The advantage gained was manoeuvrability. While an ordinary fighter with swept-back wings requires energy to change course, the X-29 would simply 'fall' in the direction indicated. Although this particular plane was never produced, aircraft designers are well aware of the trade-off between stability and manoeuvrability. Fighter planes today are, by design, very close to being unstable, while passenger planes are designed for stability'.¹³ In other words, there are cases when the principle of instability and volatility, and indeed, fallibility is built into human-machine systems right from the start: not a design fault, but specially engineered as a design advantage: 'constructive instability' in other words, as a positive case of double heteronomy.

Put differently, in good European fashion, I want to write the concept of failure into this narrative of post-human hybridization between art and life, art and artifice, artificial intelligence and artificial life, between Life and life. But it is a concept of failure not exclusively owed to Kafka, Beckett or Lacan, and instead, also includes the performative dimension one has come to associate with postmodernism (in questions of gender, speech acts and ethics) as much as with high-tech products, such as automobiles (where it refers to the quality or manner of functioning). I call it by its German (Freudian) term: *Fehl-Leistung*, which means failure of performance, but also performance of failure, and for which, in shorthand, I have elsewhere used the neologism coined by James Strachey in his translation of the text of Freud, namely 'parapraxis': the Freudian slip.¹⁴ A first provisional definition of an avant-garde for the 21st century – especially in the era of the man-machine symbiosis – would be that it will need to come to terms with the principle of 'constructive instability' and develop a poetics of parapraxis, or of 'performed failure'.

Performed Failure: Narratives of Collapse, Or: in the Destructive Element Immerse

How might such a poetics of performed failure look like, if it is to address both the internal principle of constructive instability and the external condition of heteronomy? In the circumscribed field that I started with – namely the necessary triangulation of the avant-garde, of 'life' and of media technology – I find it in the kinds of transfers that these three forces exert upon each other when placed against the now obligatory horizon of globalisation, embodied in the Internet, where terms like linear change, influence and transformation are increasingly inappropriate, but where the postmodern vocabulary of appropriation, pastiche, remediation also has less and less traction, while the notions of 'resistance', 'critique', 'opposition' seem unable to mobilize a viable response.

13. Burton Vorhees, 'Virtual Stability: A Principle of Complex Systems' http://necci.org/events/iccs/2002/Mo14_Vorhees.pdf

14. I have reconstructed (or perhaps merely constructed) a performativity of significant failure in a number of American films, including mainstream Hollywood films, such as *Forrest Gump* or *Saving Private Ryan*, and of ways of accounting for the peculiar performativity of a film like *Pulp Fiction*, the iconic movie of the 1990s, and more recently the kind of performativity of ontological doubt in movies like *The Sixth Sense*, *Donnie Darko* or *The Others*. See Thomas Elsaesser, *Melodrama and Trauma: Modes of Cultural Memory*. New York: Routledge, 2008.

The centre of gravity for the notion of 'constructive instability' as a systemically precarious equilibrium on the Internet will be the social networking and user-generated content websites, one of the most commented-upon features of what has come to be known as the dynamic web or Web 2.0.¹⁵ Within the Web 2.0 environment, the most relevant to my experiment is the combination of user-generated content sites, such as Flickr, YouTube, social network websites, like MySpace, Facebook, with data-mining marketing giants like Amazon, e-Bay and Google, as well as knowledge-aggregating sites, such as Wikipedia or the Internet Movie Database.

Among these websites, I have chosen the one most closely associated with what has come to be known as 'convergence culture' (a term introduced by Henry Jenkins),¹⁶ namely YouTube, the video-sharing site that was purchased by Google in 2006. Utilizing what I understand to be the underlying structure and dynamics of these sites, i.e. a combination of search terms or 'tags', the built-in aggregation and sorting mechanisms as well as 'cut & paste', I began by following up the trail of a link sent to me in an email to a site on YouTube, featuring a two-minute advertisement. In 2003 this ad had 'made history' not only because its fame and success proved the power of the internet as a 'window of attention' for advertisers, but also because its production values – around six million dollars for these two minutes – put it squarely in the Hollywood league of blockbusters. It also demonstrates the ambivalence of the idea of *collapse*, when understood as a bipolar principle of destruction and creation, with moments in-between: of transition, of balance, of chain-reactions. Or – to use a favourite term of urbanists and sociologists, as well as of ecologists and climatologists: of 'tipping points' (more on this, below).

The Honda Cog

The advertisement is for the Honda Accord, and is generally known as the 'Honda Cog'. It generated, besides a huge amount of Internet traffic, also serious coverage in the press, with articles in *The Guardian*, *The Independent*, and on the BBC. In short, it had a substantial cross-over effect into the traditional media as well, and became, in fact, an 'urban legend'. Such is its reputation and recognition factors that it has even spawned a Monty Pythonesque parody.

Looking at the original advertisement more closely, one notes that the setting is clearly intended to connote a gallery space: white walls, wooden parquet floor, no windows, controlled

15. Web 2.0 can be identified by seven categories (according to Sara Bentley, BBC Radio), all of which can be summarized as follows: rather than content being created by a web site, and users consuming this information, it is the users who create and monitor the content of a website: 1. Social networks (MySpace, Facebook) targeting exact community connections; 360 degree networks on your interests 'anytime all the time'; sms into the social network about where you are and then meet your friends in a city (Dodgeball) 2. Social media (community media news, blogs, podcasts): Media news (OMyNews) 3. Webware (Linux, applications shared, creative commons, freeware): Jabber Software Foundation 4. Aggregators (file contents, filtering one particular subject) 5. Mash-Ups (add features to other sites) 6. Internet TV (YouTube, Daily Motion, U-Motion) 7. Convergence and file-sharing websites (Bit-Torrent, Limewire).

16. Henry Jenkins, *Convergence Culture*. New York: Routledge, 2006.

light-sources. It alludes in a playful fashion to the work of several canonical artists of the 20th century, notably in the field of sculpture and installation (Alberto Giacometti, Alexander Calder, Jean Tinguely, Carl André: the use of the 'floor', as opposed to the wall, as display area, for instance).

It also seems very fitting that a Japanese car maker should have commissioned this ad, for it was Japan that first showed Europe and the US how to make cars with robots, how to reduce costs by just-in-time delivery: in short, it was Japanese auto firms that pioneered several of the principles we now lump together under the term 'post-Fordism', but which, on this analysis, could just as well be called 'Toyota-ism' (or 'Honda-ism'). What we see, then, is the ironic mise-en-scene of a meta-mechanic assembly line which says 'look: no hands! Pure magic' or (as the Honda slogan has it) 'the power of dreams' (alluding to the oneiric life of objects so beloved by the surrealists).

The links on YouTube around the 'Honda Cog' quickly lead to an extract of a 'making of' video which gives an extensive account of the immense effort that went into the production of such an effortless and yet inevitable concatenations of collapsing moments and obedient parts. The 'making-of' video ends up celebrating in the language of cinema our fascination with the engineering marvels that are contemporary automobiles, but it also takes on the generic features of nature documentary, about the patience it takes to 'train animals' ('our friends, the [car] parts'), in order for them to perform for humans.

The director of the *Honda Cog*, Antoine Bardou-Jacquet is a well-known filmmaker of high concept ads and music videos, working in both France and Britain, and a good friend of Michel Gondry.¹⁷ His agency highlights him on their website ('Since signing to Partizan in 2000, Antoine Bardou-Jacquet's work has consistently wowed the crowds') and Partizan also features some of his clips, among them, another car commercial for Peugeot.¹⁸

But back to the *Honda Cog*; besides the sly allusions to Japan, there is the voice at the end: I associated it immediately with Sean Connery and James Bond (and so did the users of YouTube). Very soon I discovered tags that led from the Honda Accord to the Aston Martin DB 5, Bond's famous car; the link immediately connected the 'life' of the parts of the Honda Accord to the Aston Martin's gadgets, and especially those fabulous demonstrations given at the modifications workshop in the belly of the MI 5 headquarters by the immortal engineer-inventor Q, played by Desmond Llewelyn, notably in *Goldfinger* (1964). Another link

17. Antoine Bardou-Jacquet signed to Partizan Midi Minuit in 2000. He had previously studied graphic design in Paris before setting up his own graphic design company, situated within the same offices as his close friends from Solid (an independent record company that is the centre of the French electronic music scene with such artists as Alex Gopher and Etienne de Crecy). Antoine designed album covers and logos and soon began exploring the idea of using type in a representational and more meaningful way than just as words. The album cover for Demon was created with this idea in mind and Antoine quickly built-up the process and idea of translating a static image with type rather than illustration to moving film.

18. http://www.partizanlab.com/partizanlab/commercials/?antoine_bardou_jacquet

brought me to a French mash-up of this scene, which gives it a quite different sub-text and cultural atmosphere: references are now to Christopher Lambert, Bob Marley, the Rastafarians, Californian beach culture and air lift suspension, Rizzla cigarette paper, rolled joints, all played out against intense homophobic/homo-erotic banter between Q and Bond.

The gruff boffin-engineer from MI5 who 'never jokes about his work', but visibly delights in his playful as well as lethal modifications, immediately associates another obvious father also of the *Honda Cog*: Rube Goldberg, already flagged by several YouTube=YouRube links. The name Rube Goldberg (1883-1970) stands for a kind of machine that does simple or useless tasks in an especially complicated, ingenious or roundabout way, utilizing the mechanisms of traction and transmission, but in a manner that makes them meta-mechanic (reminiscent of both Marcel Duchamp and Charles Chaplin).

Der Lauf der Dinge

However, the tag line of the *Honda Cog* ('isn't it nice when things just work') nods-and-winks not only at the knowing cognoscenti (of modern art, James Bond films or of Margaret Thatcher's first successful political campaign in 1979). It also anticipates possible legal problems (which did indeed arise), by acknowledging (not so obliquely) where and from whom the makers had 'appropriated' the basic idea for the ad: not from a London gallery, nor from a billboard, but from the Kassel documenta of 1987. There, one of the most widely celebrated art-pieces was a half-hour video, entitled 'Der Lauf der Dinge' literally 'the course of things' (generally translated as *The way things go*, but I think better rendered, exploiting the possibility of a bilingual pun, as the translation/ transition from 'der Lauf der Dinge' to 'the life of things'). Its authors are two Swiss artists, Peter Fischli & David Weis, who have been working together since the early 1970s. This tape was their international breakthrough. *Der Lauf der Dinge* follows the domino effect of a series of simple objects such as string, garbage bags, soap, Styrofoam cups, rubber tires, plastic pails, balloons, and mattresses; when combined with fire, air (gas), water and gravity, these objects form a hypnotic chain of kinetic energy that disturbs and delights the viewer with its chaotic potential and precise timing.

When I first saw *Der Lauf der Dinge* in Kassel, it had given me a quite regressive delight in seeing things enchain, knock-on and interact with each other, in a sheer endless, self-generated and self-propelled but carefully crafted, staged sequence, whose anxiously anticipated increments of disasters, collapses, explosions and conflagrations were matched by the infinite patience and delicacy with which each mini-event was thought up and set up, each one enacting often quite literally a precarious balance, in which the possibility of failure is palpably and positively inscribed.

But for an art-historically trained eye, the rough, para-industrial set-up, the processes put in motion as well as the materials used inevitably recall many of the key elements of modern sculpture, conceptual art and other avant-garde practices, notably but not only from the post-WW II period: the concern for balance and suspension recalls Suprematism and Constructivism; assemblage art (from the late 1940s) and kinetic art (from the 1950s and 60s) are evoked, while trash objects, garbage and recycled materials remind one of the New Realism and Pop. Finally, the idea of small wasted energies made useful is an homage to

Marcel Duchamp, while the energies inherent in apparently inert matter allude to the work of Carl André, not forgetting the macho-engineering skills of Richard Serra, combined with the action paintings – here duly automated and pre-programmed – reminiscent of Jackson Pollock.¹⁹

Precarious Balances: Tipping Points, Montage Effects and Long Takes

But there is another way to view and describe the Fischli & Weiss' installation, which takes it out of art-history and the avant-garde context, and instead, brings it closer to the world of technology, physics (gravity), chemistry (chemical reaction) and even evolutionary biology. Its obsession with principles of concatenation and repetition, of controlled contingency and simple processes leading to complex effects, its invocation of the four elements and their micro- as well as macro- scale interactions not only give us a 'scientific' view on the world, but one inflected by 'chaos-theory': leading at one end to 'emergence', and at the other, progressing inexorably in the direction of entropy, the irreversible winding down of heat and energy. Its meta-mechanics are thus intimately related to our second concern: that of the perceived need to redefine what we understand by life: the new 'life forms' and the new 'life-sciences'. At the same time, the overarching principle – be it cybernetic, ecological, or aesthetic – organizing the series into a flow of continuous interruptions is that of the 'tipping point', a metaphor for sudden change first introduced by Morton Grodzins in 1960, then used by sociologists, such as Thomas Schelling (for explaining demographic changes in mixed-race neighbourhoods), before becoming more generally familiar in urbanist studies (used by Saskia Sassen, for instance, in her analysis of global cities), and finally popularized by mass-psychologists and trend-analysts such as Malcolm Gladwell, in his best-seller by that name.²⁰

While initially referring to incremental changes once a certain threshold has been reached, the concept of the tipping point is now applied to any process (chemical, sociological, envi-

19. 'Mit 'Der Lauf der Dinge' wird der Lauf der Dinge auf der Ebene der materiellen Phänomene, der Geschichte der Skulptur, der Vermittlung über den Film oder das Video und der Beziehungen zur Kultur und Infrastruktur der Kunst beleuchtet. Die vergängliche Installation baut auf einem architektonisch strukturiertem Weg auf. Sie ist mit physikalischen Prinzipien (statisches Gleichgewicht, Gewicht usw.) und chemischen Produkten ausgerüstet, die darauf warten, durch Kombination erschüttert bzw. entzündet zu werden. Auch die Eigenschaften von Luft (Luftballons, die man zum Zerplatzen bringt), Wasser (Behälter, die man umkippt) und von Feuer (angezündete Kerzen) spielen eine Rolle. Die räumliche und zeitliche Koordinierung ist präzise und intelligent, so dass das Verdrehen eines in einer gewissen Höhe befestigten Müllbeutels den ersten Impuls für eine Abfolge spielerischer Katastrophen gibt (das Herunterfallen von Objekten, das Verspritzen von Flüssigkeit usw.) Die Ursachen und Folgen dieses Chaos, der Verlauf und die Materialien werden gezeigt und faszinieren den Zuschauer. Diese explizite Konstruktion unterstreicht eine wissenschaftliche Sichtweise der Welt und erzeugt die Metapher einer erforschten Welt', – Thérèse Beyler.

20. Malcolm Gladwell, *The Tipping Point: How Little Things Can Make a Big Difference*, New York: Little Brown, 2000. Ian Bremmer, whose Eurasia Group advises on political risk, sums up the challenge in a simple graphic that is this year's tipping point – the 'J Curve', which outlines 'how to turn authoritarian regimes into stable, open democracies'. See Ian Bremmer, *The J Curve: A New Way to Understand Why Nations Rise and Fall*, New York: Simon & Schuster, 2005.

ronmental, etc.) for which, beyond a certain point, its rate of change increases dramatically. What is relevant about this metaphor for my experiment is, of course, its multi-dimensionality and multi-functional semantics. Besides the fact that it foregrounds scale, and that it works, when analyzed mathematically, according to the cybernetic principle of 'positive feedback', it implicitly also refers to a cognitive moment of collapse (of categories, of modes, and of perceptual registers), comparable to 'Gestalt-switches' or Ludwig Wittgenstein's duck-rabbit rebus picture. It also brings to mind the (literary) conceit of stillness and poise in a field of (destructive) energy (eye of the cyclone, crest of the wave), and it obliges us to align the concept of equilibrium with a whole range of other, more contested aspects of existence, from mathematical equations to Greimas' semiotic square, from the 'Nash equilibrium' as used in game theory and economics, to stochastic systems in general, not without memories of Hegelian transformation or sublation (*Aufhebung, Umschlag*) of quantity into qualitative change.

And yet, *Der Lauf der Dinge* is unthinkable without current media-technologies and especially the almost viral proliferation of cinema: from the movie house to the home entertainment centre, from the big screen to the portable phone, from the television in the home to the monitor in offices and airports, from surveillance control centres to electronic billboards, from portable laptops to museums and art galleries. A product of the latter, Fischli & Weiss' appearance at the documenta in 1987 was an early harbinger of a trend that found itself consolidated ten years later, in Catherine David's documenta X (1997), now remembered for giving many well-known filmmakers (Chantal Akerman, Jean Luc Godard, Harun Farocki, Sally Potter) their cross-over point from avant-garde cinema to installation art, while also encouraging visual artists to move into film (William Kentridge, Pierre Huyghe, Johan Grimont).

Without exploring this topic here further, it is nonetheless crucial to my argument that both the *Honda Cog* and the tape of *Der Lauf der Dinge* are the work of bona fide filmmakers. I already highlighted this in my comments on the *Honda Cog*, but it is worth pointing out that *Der Lauf der Dinge* only exists as a tape: it is not the filmic record of a performance of machinic self-destruction, such as Tingeley staged them in New York in the 1960s, or the Fluxus Happenings of Wolf Vorstell and the Vienna Actionists, but an event staged specifically for the camera. The mise-en-scene in each case is that of an auteur-director, who decides exactly where to place the camera, when move it, how to frame and reframe each action and its (con-)sequence. An entire half-century of film theory comes alive in these mini-films with maxi-budgets, around the 'long take' and 'montage', between 'staging in depth' and 'cutting in the camera'. While some 'invisible edits' are discernable, long take classic continuity editing is the deliberate option in both pieces, as calculated as Orson Welles' opening tracking shot in *Touch of Evil* (famously pastiched in Robert Altman's *The Player*), or the bravura zoom in Michael Snow's *Wavelength*.

In both works one also notes a studied anachronism, a retrospective temporal deferral at work. This has two aspects: one concerns their artistic technique, the other their (meta-) physics. Regarding technique, the *Honda Cog* team are proud to certify in the 'Making of' video (indeed it is the condition of their success) that they engineered this extraordinary concatenation 'for real' and not with the aid of digital effects, which for the aesthetic they

are committed to would have amounted to 'cheating'.²¹ And yet, by 2003 digital effects had already become the norm in advertising, so that their decision is a deliberate self-restriction such as one knows it from minimalism or concept art at the highpoint of Modernism. Likewise, Fischli & Weiss produced their tape at around the time when artists were seriously considering their response to the new media technologies of video compositing and digital editing. Their work is clearly a manifesto in favour of materiality and indexicality, an ironic finger pointed at the digital to come, and taking a stand in the heated debate about the loss of indexicality in the post-photographic age.

The second studied anachronism concerns the physics used in both works, and the way it figures causality. Neither *Roadrunner* gravity-defying antics here, nor the oneiric dream logic of a Salvador Dali or Hans Richter film sequence. Causality in these films operates at the familiarly middle-level and within human proportions. Rooted in Newtonian physics, the makers celebrate a visible, tangible world, fast disappearing into invisibility at both ends of the scale (at the macro-astronomic as well as at the micro-sub-atomic level), but also a linear causality vanishing in the media in which we encounter their work: the Internet and YouTube are, precisely, non-linear and rhizomatic. The 'old physics' on display are in the case of the Honda Cog highly stylized and deliberately tweaked for humorous effect, while in *Der Lauf der Dinge* the concatenation of build-ups and disasters has also a more sombre, cosmic dimension, as if we were invited to be once more present at the moment of the 'Big Bang', i.e. the birth of our own physical universe.

Around the World in Eighty Clicks

Fischli & Weiss have as their motto: *Am schönsten ist das Gleichgewicht, kurz bevor's zusammenbricht* (balance is most beautiful just at the point when it is about to collapse). While clearly applying to their work as a whole,²² this aesthetics of the tipping point also encapsulates the main challenge that my experiment with tagging and user-generated links on Internet sites such as YouTube poses. For at this juncture in my test, the question arose: where would this semantic knot or node around constructive instability and the performativity of failure take me, once I had chosen the Honda Cog and *Der Lauf der Dinge* as my epicentres, once 'collapse', 'concatenation' and 'chain reactions' were my search criteria, and once YouTube's tag-clouds circumscribed and defined my self-imposed constraints? One answer was: nowhere at all; a second one: all around the world; and a third answer would be: into the philosophical recesses of what it means to be 'singular-plural' against a horizon of incremental changes of scale.

21. 'In 2003, Antoine [Bardou-Jacquet] directed the internationally acclaimed and multi award winning Honda 'Cog' commercial for London's Weiden & Kennedy. It is a 2 minute commercial showing Honda parts bumping into each other in a chain reaction. It took months of meticulous planning and trial and error, with a four day shoot at the end. It was shot in two takes and was all done for real. It was a victory for patience and passion! It first caused a stir running throughout the entire commercial break during the Grand Prix and went on to win a Gold Lion at Cannes, Best commercial and Gold at BTAA and a Gold Pencil at D&AD to name but a few.' Partizan website.

22. As demonstrated, for instance, by their series *Equilibres - Quiet Afternoon* (1984), on show in the Fischli & Weiss 'Flowers & Questions' retrospective at the Tate Modern in London Oct 2006- Jan 2007).

Nowhere at all: following the YouTube tags puts one on a cusp, precariously balanced and perilously poised over an abyss: of hundreds, if not thousands of similar or even the same videos, commented on and cross-referenced to yet more of the same and the similar, plunging one on a serendipitous descent into chaos. In Foucault's epistemic terms, the Internet is 'pre-modern' in its regime of representation: resemblance rules, but unlike the Great Chain of Being rising to God, this concatenation extracts the terrible price that everything looks like everything else, precipitating a Fall into the Hell of eternal in-difference and infinite repetition.

All over the world: searching the *Honda Cog* and *The Way Things Go* on the Internet and YouTube also started off several other chain reactions, which opened up many wholly unexpected avenues, in a wonderful efflorescence of rhizomatic profusion, beckoning in all directions and sending one on a most wonderful journey of discovery, more stupendous than Faust and Mephisto on their Magic Carpet in F.W. Murnau's *Faust*, and more recursive, reflexive and self-referential than the Marx Brothers' *Duck Soup* or Buñuel's *The Phantom of Liberty*. But it also took me to many different places: to Cairo in Egypt and Ohio in the US, to Groningen in the Netherlands and Yokohama in Japan, to Manhattan and to Hamburg, to Purdue, Indiana and to a science lab in Utrecht, to teenagers in Germany and an artist in a New York loft, to a gallery in Tokyo and a television studio in Paris. Not all of these journeys or forking paths can be retraced here, so for convenience's sake, I have sorted and bundled some of them into clusters, and allowed the clusters to become small 'cluster-bombs', ignited and radiating outwards from the *Honda Cog* and *Der Lauf der Dinge*.

Cluster 'Rube Goldberg'

That the tags from Fischli & Weiss should quickly bring one to Rube Goldberg was to be expected. But little did I suspect that 'out there', the idea of building such elaborate mechanical contraptions serving a very simple purpose, has an enormous following, and that several countries, including Germany and the US, hold annual Rube Goldberg conventions, while trials, test-runs and rehearsals of their (usually imperfect) functioning take place in high-school workshops or in large public halls, but are most often videoed in the proverbial Dad's garage in New England, or on the little brother's bedroom floor in a Cairo apartment. With the camcorder always at the ready, geniuses of little more than eight or ten years of age, try out how to fill a cup of coke from bottle catapulted down a chute by a mouse-trap snapping tight, or show us how to use the ringer on their mobile phone to set off a chain reaction that switches on the radio. At a major Rube Goldberg convention organized by Purdue University among engineering graduates from all over the US, the task was to squeeze fresh orange juice using a minimum of twelve different mechanical, self-propelling steps.

Cluster 'Pythagoras Switch'

From the Rube Goldberg connection it was but 'one degree of separation' that led – 'laterally' but also by the simple addition of an adjective in one of the user comments – in an apparently quite different direction. The unlikely combination 'Japanese Rube Goldberg' landed me among a cluster of videos from a Tokyo-based educational television programme, called '*pitagora suicchi?*'. This is the Japanese pronunciation of 'Pythagoras Switch', and is aimed at children. It shows simple, but ingenious combinations of everyday

objects (tea-kettles, books, pencils, rubber bands, steel tape measures, chinaware spoons) aligned in such a way as to allow one or several small balls (or coloured marbles) to travel in a circuitous but downward motion. Subjecting the ball to the laws of gravity (Newtonian, for sure), the objects create intricate obstacles, which interrupt but cannot finally stop the ball's downward trajectory across balancing mechanisms of suspension, reversal, dispersion, and through levers, switches and gates that open up unexpected detours, provide surprising side-effects and cause delightful distractions. The journeys always end with a tiny flourish, a point of recursiveness and self-referentiality: signalled by the moment when the ball falls into a receptacle or hits a mini-gong, it confirms the identity of the show and plays a maddeningly addictive jingle. A Pythagoras Switch is a minimalist exercise in creating closure out of indeterminacy, miraculously conjoining the pleasures of free play with the strict rules of physics.

Why is it called Pythagoras Switch? Nobody seems to know, and on the NHK website the makers merely hint at 'the Eureka-experience' that children are supposed to have, thanks to a sort of category switch: 'Pythagoras Switch' wants to help kids have that moment of A-HA! We want to raise thinking about thinking, to flip that epiphany switch in every child'. Granted that these short performances do indeed flip a switch, I nevertheless tend to think of the name 'Pythagoras' as a misnomer and even a *parapraxis*, a *performance of failure*: namely, not only is 'Eureka, [I have found (it)]' usually attributed to Archimedes (and not Pythagoras), but it should really also be called the Archimedean switch for another reason. After all, the principle of *pitagora suicchi* resembles the famous fulcrum associated with Archimedes' name: the single point of equipoise that he said could lift the universe from its hinges. But the fact that it is called Pythagoras leads one in other no less intriguing directions: to geometry and to Euclidean solids, as well as to the so-called Pseudo-Pythagoreans, the first important Gnostics of the ancient world, who survived right into the Middle Ages and beyond, and whose main analysis of the universe was in terms of the magic of numbers and the mysteries of mathematics. Pythagoras would have been a fitting grandfather of the prodigious power of algorithms, and thus the appropriate patron saint not so much for the Pythagoras Switch and instead for the sort- and cluster-algorithms of YouTube that made me discover *pitagora suicchi* in the first place, right next to Rube Goldberg.

Cluster 'Domino Toppling' & Celebrity TV: Oriental(ist) Excess

If the Pythagoras Switch is minimalist and haiku-like, in its elegant economy and delicate epiphanies, a close cousin of the Pythagoras Switch, by contrast, is all on the side of excess, the incremental and of the nearly 'getting out of hand': I am referring to that other major Japanese pastime, having to do with knock-on effects, namely 'Domino toppling'. Here, too, Japanese television is in the forefront, since it appears to stage regular domino telethons, such as the one I happened to hit upon with another mouse-click, and which featured the entire inventory of Dewi Sukarno, a notoriously rich and flamboyant society-lady and television personality (who models herself on Imelda Marcos, not least by owning racks and racks of shoes). All her belongings – fur coats, shoes, jewellery, books, furniture, etc. – are lined up so as to topple and fall on each other in a descending cascade of conspicuous consumption and commodity fetishism from the top floor of her villa to the basement and out to the swimming pool.

Another of these televised Japanese shows on YouTube features a more high-tech contraption, where the steel ball's trajectory is only one phase, releasing other mechanical agents and setting off further reactions, including small explosions in the manner of Fischli & Weiss, but also gravity-defying underwater action in goldfish bowls. The show is commented on by experts, who fire up and encourage the performing parts, as if they are players in a competitive sports event, like a sack race or a steeple-chase, and one of the videos in particular combines the conceptual grace of '*pitagora soichi*' with the rumbunctiousness of Sumo-wrestling, while serving a typically Rube Goldberg purpose, namely to make a simple task – in this case to serve a bowl of Ramen noodles with an egg on top – very complicated and intricate indeed. Once again, it is worth noting the aesthetic that oscillates between the cinematic and the televisual: while the Pythagoras switch programme prefers long takes, with a camera that pans and reframes rather than cuts, the Japanese Rube Goldberg contest and the Domino telethon, by contrast, favour the typical action replays of televised sports events, but with their spoken commentary are also reminiscent of the '*benshi*' tradition of silent cinema, and even re-invent the action overlap from the very first films.

The domino toppling contests also brought home another lesson of globalisation: 'don't follow the flag, follow the tag'. Just as commodities, trade and labour no longer 'respect' the boundaries of the nation state, so the tags 'chain reaction' or 'domino telethon' easily cross borders and even continents. The world of domino toppling, for instance, also has an annual championship, the 'Domino Day', which made the Netherlands a mere click away from Tokyo. For it seems that for several years now (in alternation with the South Koreans), the Dutch have been world champions and holders of the Guinness record for toppling the largest number of dominoes in one go: 4, 079 381 million of them, to be exact, at the 2006 world championship, held on Nov 27, 2006 in Groningen, on the theme of 'Music in Motion' designed by the Weijers Brothers Domino Production Company and televised by Endemol. As the dominoes fell, they formed an ever-changing kaleidoscope of images that fitted the year's theme. Music, magnitudes and motion were all in the service of an 'image', comparable to the formations one sees at the opening ceremonies of Olympic Games or to the flag-waving girls in North Korea, whose assembled multitudes make up a gigantic portrait of their Dear Leader.

Between Epiphany and Entropy

Perhaps it is fitting to interrupt this 'tour of the YouTube world' with an 'image', and one of totalitarian domination. While multitudes (of dominoes or of young women) forming a recognizable likeness highlight the coercive, normative power of such software as operates the Internet at the level of the algorithms, the codes and protocols, mostly hidden from view and in any case incomprehensible to the ordinary user, the idea of an image reminds us of the fact that in the man-machine symbiosis predicted with such apparent equanimity by the post-human, two very different kinds of system are expected to communicate with each other, once more 'heteronomous' in their doubly implicated and mutually determining relation of constraint and possibility. For this 'image' is nothing but the filter, membrane or user-friendly face – the 'interface', in short – between stupid but infinitely patient (and performative) machines, running on programmes relayed to gates and switches (electric-electronic dominoes, one might say), and intelligent but increasingly impatient (as well as accident-prone) humans, requiring visual representations that provide a sense of recogni-

tion and self-presence, relayed through words, sound and above all: images. The loops would seem to be closed.

But here, then, is the first paradox: YouTube, as indicated, is a user generated content site, with a high degree of automation, where nonetheless a certain structured contingency obtains, as indicated by the remarkably coherent clusters I was able to extract via the tags attached to the videos. The structured contingency is, then, strongly informed and shaped by mathematics, via its programming architecture and design, as well as its search and sort algorithms. At the same time, it seems to mimic certain primitive forms of life, comparable to the swarms and clusters of bacteria (such as in yeast, algae, slime mould or other 'emergent' life-forms), not least because what exists on YouTube is constantly growing, changing and adapting (at a rate of some 60.000 a day, with almost as many removed because they infringe someone's copyright). The site, traversed by a semantic traveller like myself, presents the impression of an organism, alive and in full evolution, where things mutate, accumulate, disperse, die and re-emerge.

This then, would be the second paradox: what the 'stupid' machine and the 'intelligent' tags, supplied by users, produce when thus 'interfaced' is far from either trivial or meaningless. Among the tide-pools of amoebic life, I have encountered a most varied and interesting cast of characters: some known by name, such as 'Rube Goldberg', 'Pythagoras', 'James Bond', 'Dewi Sukarno'; others known because they sign their work: Antoine Bourdou-Jacques, Fischli & Weiss, Tim Fort, Sato Masahiko, the Wijers Brothers; many more merely present themselves to the camera in low-res home-made videos. Thanks to all of them, I have found on YouTube ways of knowing and ways of being that are ludic and reflexive, educational and participatory, empowering and humbling, in short: marking an unusually soft dividing line between creative design and hard-core engineering, art and technology, singularity and repetition: preconditions if one wants to come to an understanding of the possibility of new 'life-forms' emerging at one of the sites of the post-human: the electronic world of algorithms and statistics, of contingency, constraint and collapse, in short: of constructive instability and performative failure, in a world divided, but also held together by Ranciere's 'double heteronomy'.

This presents the third paradox: anyone conducting this kind of research soon realizes there is another downside to the upside, which I have hinted at all along. On the one hand, a site like YouTube can be addictive, as one video drags you along to another. Yet after an hour or so, one realizes on what fine a line one has to balance to keep one's sanity, between the joy of discovering the unexpected, the marvellous and occasionally even the miraculous, and the rapid descent into an equally palpable anxiety, staring into the void of a sheer bottomless amount of videos, with their proliferation of images, their banality or obscenity in sounds and commentary. Right next to the euphoria and the epiphany, then, there is the heat-death of meaning, the ennui of repetition and of endless distraction: in short, the relentless progress of entropy that begins to suck out and drain away all life. The point of the exercise is thus not one or the other, not cherry-picking the gems like the Hondo Cog or *The Way Things Go* and skipping the rest, but to sense the trembling tightrope at all times, to remain suspended between epiphany and entropy: *am schönsten ist das Gleichgewicht ...*

Can one detect here the outlines of a mode of being that does indeed cross back and forth between the traditional boundaries of nature and culture, of technology and biology? As far as the future of art and of knowledge is concerned: it is hard to say where to draw the line between the nerdy ingenuity of Aaron, Daniel and Tejas, the creators of a 'cell-phone to I-pod' Rube Goldberg machine of special imaginativeness, and the lunatic artistry and allusive erudition in the endeavours of a loft-genius like Tim Fort? How is one to evaluate the anti-music-video 'music-video aesthetics' of Antoine Bardou-Jacques and his team on the *Honda Cog*, compared to the certified 'documenta-to-Tate Modern' art-world status of Fischli & Weiss? And how to square the gallery work of Sato Masahiko with his Pythagoras Switches for NHK Children's' television?

What we seem to be faced with is the uncanny possibility that the avant-garde techniques of the first part of the 20th century, and the 'life' processes of the 21st century reveal important common features, across a medium, the Internet destined to disappear as a medium because of its very pervasiveness and ubiquity. It does indeed oblige us to rethink the role of art and the avant-garde, in the face not so much of technology, but in the face of 'life'. As this form of life becomes more engineered, programmed and 'made', so art - I have been arguing - may need to become more like life than life itself (as opposed to life-like) in order to survive. In the sense of the heteronymous relations with which I began, and which I re-encountered on YouTube in the recto and verso of epiphany and entropy, 'art' will be the very bearer of life, by being the guardian of life's own antinomy: what Freud called 'the death drive', at once the energy behind repetition and redundancy, as well as the moments of breakdown and interruption. It could be the same heteronomy or parallax view that makes evolutionary biologists hesitate between evolution as adaptation to environment, and evolution as that which 'progresses' through contingency and catastrophe, singling out human being by the constitutive way in which they are in-adapted to their environment. This might be yet another reason why Fischli & Weiss' performance of 'balance and collapse' has a terrifyingly 'cosmic' but also reassuringly 'comic' dimension, for it corresponds in important respects to what I now want to call 'the necessary performance of failure', at the very heart of the avant-garde as well as of 'life'. The *telos* of entropy in *Der Lauf der Dinge* reminds us of our finitude, and - held against the open horizon of the Internet whose Web 2.0 feedback loops signify unimaginable and yet palpable magnitudes - it suspends us between infinity and indefiniteness, a state only made bearable or even pleasurable, thanks to the subversive balancing act of art.