

# NETWORKS OF DESIGN



# **NETWORKS OF DESIGN**

**Proceedings of the  
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*Networks of Design:  
Proceedings of the 2008 Annual International Conference of the Design History Society (UK)*

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Jonathan Glynne  
Fiona Hackney  
Viv Minton



## FOREWORD

### **‘Design’- A little word that constitutes a revolution**

These are exciting times for those involved in design and its histories. As never before we are seeing an opening up of the discipline, and an expansion of what counts as design. Air, manners, movement, recipes, plumbing and medicine, for instance, are now all acknowledged parts of the designed environment and this book covers, amongst many others, such diverse topics as sound technologies, sustainable communities, digital archives, psychopharmaceuticals, cars, stamps, the lawnmower and the family tree. As we experience world economic and environmental crises, and witness or endure the undiminished inequalities and brutalities of poverty, racism and war, these are challenging times for all of us, and not least for those concerned with design.

This expanded concept of design and what it might mean at a time of crises was the subject of Bruno Latour’s prescient keynote lecture ‘A Cautious Prometheus? A Few Steps Toward a Philosophy of Design’ at ‘Networks of Design’ the annual conference of the Design History Society, the proceedings of which form the basis of this book. Design, Professor Latour (below, p. 3) proposed provocatively, “is one of the terms that have replaced the word “revolution”!’ The features of this design revolution, in Latour’s estimation, are very particular; they provide an ideal starting point for this foreword and a frame of reference for the collection of papers. Neither a heroic nor a hubristic practice, design is rather an antidote to grand illusions and certainties. It constitutes a careful and modest revolution, which above all is defined by care: the humility of planning, attention to detail, craft and skill, careful conversations, redesign, as well as artificiality, and shifting transitory fashions. One of Latour’s (below, p. 6) great insights, in this respect, is that he envisages design as a “precautionary principle” one that involves being “radically careful, or carefully radical”; as the catastrophic consequences of ideologies of modernisation and progress sound in our ears, there has never been a better time for precaution and radical care.

The premise for ‘Networks of Design’ arose from discussions with colleagues in Historical and Cultural Studies and the School of Design at University College Falmouth. An excitement about actor network theory (ANT) and a sense that it offered new ways of thinking about and approaching, not only design but also its histories, resulted in a project that brought together just under three hundred people to listen to over one hundred and fifty papers given by scholars, designers, curators and those involved in the design industries from across the world. Delegates from as far a field as New Zealand, India, Norway and North America, and from institutions as diverse as Cornell University, the European Commission and the Getty Institute joined those from British universities, museums and design practices, to present papers and exchange views. The conference was a categorical success and, with speakers from fields as varied as environmental engineering, art history, geography, crafts, history of technology, media studies, art history, graphic design, anthropology, architecture and, of course design history, may itself be described as a network. However, as Latour (2005, p. 143) reminds us, being connected or heterogeneous is not enough; it all depends on the “sort of action that is flowing from one actant to the other, hence the words ‘net’ and ‘work’(...) It’s the work, and movement, and the flow, and the changes that should be stressed”. The precise nature of the work, communication or transformation in participants’ thinking or views that may, or may not, proceed from the conference and this book have yet to be seen, but we hope that many future publications, writings and exchanges will issue from ‘Networks of Design’, and look forward to participating in the discussion.

A few words about the conference will outline its aims and the tenor of debate. First off, the organisers never planned to propose ANT as a miracle theory, which could or should be mapped wholesale across to design. Rather, as the call for papers announced, the intention was to explore the wider implications of an actor network perspective for design history, encouraging “a more collaborative and interconnected approach (lateral as opposed to hierarchical)”, encouraging “a variety of ‘takes’ on an already versatile discipline” ([www.networksofdesign.co.uk](http://www.networksofdesign.co.uk)). Clearly, there are problems in appropriating ANT for design history. As Professor Latour intimated in the question session after his key note speech, how useful is a theory developed within the social sciences for historians, who are engaged in very different types of projects, and in a discipline with its own established methodologies? Feelings were running high, exac-

erated by the inter-disciplinary nature of the conference and, as those reading the papers in this book will find, many different ‘takes’ on the question emerge. Simply put, the nub of the problem seemed to be that while social scientists well versed in ANT were sceptical about design historians interpretative and, as yet, emergent ideas about actor network theory, design historians felt that not all papers fell within the perceived parameters of their field. All of which is to be expected; change does not come without cost and, more often than not, involves pain. Our sincere hope is that these are growing pains, a sign of the expansion, development and maturity of design history which, at the age of thirty (an event celebrated at the conference), still remains a relatively youthful discipline.

‘Networks of Design’, as these proceedings testify, is a work-in-progress; it was intended to be experimental, to test the boundaries and push delegates out of their comfort zone. Whereas ANT is beginning to be employed in design studies: Ingram, Shove and Watson (2007), for instance, and Ben Highmore’s introduction to his invaluable *Design Culture Reader* (2008), it is less developed in design history. Such texts show the way. Speaking at the conference, Highmore expanded on the notion of ‘entanglement’ rather than networks, foregrounding the need for a range of perspectives to simultaneously examine the complexity of the designed environment; the “hopes and desires, the frustrations and labours, the feelings and materials that are woven into our artificial worlds” (Highmore, 2008, p. 2). Kjetil Fallan, meanwhile, in his amusingly titled paper, ‘An ANT in our pants? A design historian’s reflections on actor network theory’, which appears in this book, convincingly articulates the potential for design historians in appropriating actor network theory as a theoretical framework facilitating new and dynamic ways of thinking about design. Having “an ANT in one’s pants”, Fallan (below, p.51) concludes, “might be a nuisance, but it is an effective antidote to complacency”, a sentiment with which many design historians wholeheartedly agree.

With this in mind, this foreword will outline some of the main tenets of ANT, giving some preliminary thoughts about its value for design history. We emphasise that these are first reflections and draw on our reading of some and, due to limitations of space, by no means all of the ninety or so papers. The intention is to encourage readers to delve further into the papers that follow and to stimulate them, through their own work, to join the debate. Firstly, a note about structure; acknowledging that thinking about networks foregrounds performance, negotiations, processes, strategies of interconnection and the heterogeneous relationships between people and ‘things’, papers are organised under five thematic strands: Networks of Texts, Ideas, Technology, Things and People. A format developed from the conference parallel strands, it aims to foreground shared preoccupations and interests, but not to preclude cross-strand correspondences; indeed, the concept of networks is predicated on connections between these areas. Each thematic category was defined in the following terms: ‘Texts’ (involving text and image) focuses on networks of mediation, incorporating, among others, the narratives and networks of the communication media; ‘Ideas’ considers ideas that flow within and through networks of design history, culture, theory and practice; ‘Technology’ involves the systems that comprise, materialise and shape technologies as well as the technologies themselves; ‘Things’ explores the affective connections and interactions between people and things, and ‘People’ examines how, and to what end, collectives of people act as individuals, groups, organisations, communities, corporations or other conglomerates. While the majority of papers in this book are outcomes from single or joint-authored academic research, the Forums: ‘Echoes: a collaborative video project’, ‘Virtual Networks, social fabrics’, ‘Beyond the limits of networking’ and ‘Making Things: the digital revolution in designer maker practice’, take practice as their starting point to emphasise a collaborative and discursive approach to work-in-progress in art and design.

A common misconception about ANT is that it infers networks such as the web, email or other forms of new technology. Latour (2005, pp. 131,128) sets us straight when he states, “Network is a concept, not a thing out there (...) a tool to describe something not what is being described”. The actors (whether human or non-human) that create networks are mediators that transform effects rather than intermediaries, which simply transport them: an ANT account is a “narrative”, “description” or “proposition” where all the actors “do something and don’t just sit there”. The problem of understanding the affective agencies embedded in and activated by networks is, in one way or another, central to all the papers in this book. Reference to a few examples provides a sense of the rich variety of material, approaches and shared concerns. Designers’ cultural networks, for instance, is a recurrent theme. While Jasmine Rault’s paper on ‘Sapphic Modernity’ explores overlapping design strategies and connections among people: women for whom interior design became a means of resisting heteronormative modernism and creating non-heterosexual female identities in the 1920s, ‘things’, in the form of the architectural model and, crucially, the architectural presentation, enable Albena Yaneva to investigate the architectural culture and practices

of designers; that is, “architecture *in the making*” rather than “architecture *made*” (below, p. 220). Sarah Bell and Tse-Hui Teh, in contrast, prioritise infrastructure and the need to develop new networks of people and things to shape sustainable cultures of water consumption in cities; their proposed system of ‘co-evolutionary design’ works with hydrology, history, culture and technology. Latour (2005, p. 55) has stressed the freer interpretation of actants’ activities that literature, plays and films allow, providing a “vast playground to rehearse accounts of what makes us act”. Connecting, among other things, the surreal evocations of film directors Powell and Pressburger with the spectacles concocted by Walter Scott, Jonathan Faiers (below, p.168) weaves a convincing account of tartan as a “mythic material” that, not only encompasses ideas of nationhood, clanship and political allegiance, but is also offers, “a map of departures away from this world and its traditional cartography of nation, class, and sectarianism”.

A fundamental premise of ANT is the move from the macro to the micro, from surrounding contexts and frames to the task of observing and recording the traces of connections and collections. Attention to the terms in which the actant ‘speaks’, how they describe, define and conceptualise the social corresponds with recent work on design and oral history (see Special Issue of the *Journal of Design History* edited by Linda Sandino on Oral Histories and Design), and Bronwen Edwards’s paper here, ‘Concrete Watching: Networks of Architectural Activism’, evidences this, detailing the activity of visiting buildings undertaken by members of The Twentieth Century Society. The “enthusiastic, celebratory, and bodily” relationship with the architecture, which emerged from discussion with society members, contrasts tellingly with a certain “class-conscious un-ease” that Edwards (below, p. 311) observed on visits when, for instance, “a coach of camera-laden architectural enthusiasts” disembarked in a public housing scheme; a conflict of interest that an actor network approach may usefully analyse.

One of the most controversial aspects of ANT has been the inclusion of objects as actors or participants in networks. For design historians and those working with material culture, used to thinking carefully about the ways in which ‘things’ animate, communicate, transform, enable, symbolise, modify, encumber, suggest or, in many more ways, make a difference and *mean*, such controversy may seem strange; and in this respect we are ahead of the game. Perhaps the majority of papers in this book focus on the agency of non-human actants, particularly under the thematic strands ‘Things’, ‘Texts’ and ‘Technology’. ANT, with its expanded notion of mediation and agency, accords with shifts in design history over the past ten years, away from a discipline that studies prescribed objects, individuals and processes (the modernist canon of design) to wider concerns about consumption, material culture, mass communication and subjectivity. The invaluable thing about ANT, however, is that it pushes us to think about the very particular nature, effects and power relations embedded in and materialised through the interconnections between people and things, a central issue for those who wish to avoid hiding the cause of social inequalities.

A little harder to swallow is the move away from explanatory contexts (ideological, social, cultural, economic) implicit in actor network theory and, in particular, Latour’s rebuffal of modernisation (*We Have Never been Modern*, 1993). His claim that, “To think of artefacts in terms of design means conceiving of them less and less as modernist objects, and conceiving of them more and more as ‘things’”, however, is completely in tune with recent work in design history, which prioritises material culture, performativity, gender, amateurism, domestic and everyday life (Judy Attfield’s work, for instance, or recent issues of the *Journal of Design History* edited by Paul Atkinson and others which focus on DIY, amateur practice, the vernacular and the dilettante). An actor network approach, moreover, has interesting implications for design practice. Our second keynote lecture, by Professor Jeremy Myerson (below, p.11) from the Royal College of Art, which explores the transformation of the office environment over the past hundred years from, “a visual metaphor for the power of the corporation to an expression of the power of the network”, suggests ways in which designers and design historians could work collaboratively to address the problems of ‘knowledge workers’ for whom the office can no longer be considered as a fixed architectural space but has become “nodes in a network”.

Travel and the experience of travelling crop up frequently in Latour’s work, indeed one of his motivations for attending the conference was to travel to Cornwall, a place he had not previously visited. In *Reassembling the Social* (2005) the travel guide becomes a metaphor for the academic project as Latour dismisses ‘method’ and ‘methodology’ as elaborate, and potentially confusing, terms for guidance on where to travel and what to see. We would like to conclude this introduction with our thanks to Professor Latour and all the many people who made the long journey to participate in ‘Networks of Design’, most especially those

who kindly contributed papers to this ebook, and the hope that the journey is not yet over, but that further fruitful dialogues about networks, design and design history lie ahead.

Fiona Hackney, Jonathan Glynne and Viv Minton

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## **KEYNOTE PAPERS**

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## **A cautious Prometheus? A few steps toward a philosophy of design (with special attention to Peter Sloterdijk)**

**Bruno Latour**, Sciences-Po, Paris

It came to me at the launch party for the Networks of Design conference - I was struggling to grasp the extent to which the word 'design' has been expanded when we were invited to visit an exhibition called "Re-imagining Cornwall"! I was aware that corporations had to be reengineered, natural ecosystems reclaimed, that cities had to be remodelled and wastelands redeveloped.

I knew that neighbourhoods had to be beautified and political platforms scripted, and that interiors had to be redecorated and journal layouts restyled. The Cornwall exhibit confirmed that I was indeed on the right track: if entire provinces can be redesigned then the term no longer has any limit.

When I was young, the word design (imported to French from English) meant no more than what we now call 'relooking' in French (a good English word that, unfortunately, does not exist in English). To 'relook' means to give a new and better 'look' or shape to something - a chair, a knife, a car, a package, a lamp, an interior - which would otherwise remain too clumsy, too severe or too bare if it were left only to its naked function. 'Design' in this old and limited meaning was a way to redress the efficient but somewhat boring emphasis of engineers and commercial staff. Design occurred by adding a veneer of form to their creations, some superficial feature that could make a difference in taste and fashion. Even if design could be greatly admired, it was always taken as one branch of an alternative: look not only at the function, but also at the design. This dichotomy was true even though the best design was one that, in good modernist fashion (as it did in 'functionalism'), approximated function as closely as possible. 'Design' was always taken in this "not only...but also" balance. It was as if there were really two very different ways of grasping an object: one through its intrinsic materiality, the other through its more aesthetic or 'symbolic' aspects.

I know this is a very poor rendering of what you now want to mean by 'design'. (I am well aware that the French use of the word is much more restricted than the Scandinavian or the English one). However, I want to utilise this definition from my youth as a base line from which to fathom the extraordinary career of this term. From a surface feature in the hands of a not-so-serious-profession that added features in the purview of much-more-serious-professionals (engineers, scientists, accountants), design has been spreading continuously so that it increasingly matters to the very substance of production. What is more, design has been extended from the details of daily objects to cities, landscapes, nations, cultures, bodies, genes, and, as I will argue, to nature itself - which is in great need of being re-designed. It is as though the meaning of the word has grown in what logicians refer to as 'comprehension' and 'extension'. First, it has grown in comprehension - it has eaten up more and more elements of what a thing is. Today everyone with an iPhone knows that it would be absurd to distinguish what has been designed from what has been planned, calculated, arrayed, arranged, packed, packaged, defined, projected, tinkered, written down in code, disposed of and so on. From now on, 'to design' could mean equally any or all of those verbs. Secondly, it has grown in extension - design is applicable to ever larger assemblages of production. The range of things that can be designed is far wider now than a limited list of ordinary or even luxury goods.

The reason I am interested in the spread in comprehension and extension of the term design is not because of any intimate knowledge of design practice. (I know even less about its history and I hope the many historians of the notion among you will not contradict me too much). Yet I take its expansion as a fascinating tell tale of a change in the ways we deal with objects and action more generally. If it is true as I have claimed that we have never been modern, and if it is true, as a consequence, that 'matters of fact' have now clearly become 'matters of concern', then there is logic to the following observation: the typically modernist divide between materiality on the one hand and design on the other is slowly being dissolved away. The more objects are turned into things - that is, the more matters of facts are turned into matters of concern - the more they are rendered into objects of design through and through.

If it is true that the present historical situation is defined by a complete disconnect between two great alternative narratives - one of emancipation, detachment, modernisation, progress and mastery, and the other, completely different, of attachment, precaution, entanglement, dependence and care - then the little word 'design' could offer a very important touch stone for detecting where we are heading and how well modernism (and also postmodernism) has been faring. To put it more provocatively, I would argue that

design is one of the terms that has replaced the word 'revolution'! To say that everything has to be designed and redesigned (including nature), we imply something of the sort: "it will neither be revolutionised, nor will it be modernised". For me, the word design is a little tracer whose expansion could prove the depth to which we have stopped believing that we have been modern. In other words, the more we think of ourselves as designers, the less we think of ourselves as modernisers. It is from this philosophical or anthropological position on design that I address this audience tonight.

### Five advantages of the concept of 'design'

I dare to articulate this odd argument based (very flimsily I agree) on the various undertones of the word 'design' itself. It is the weaknesses of this vague concept that give me reason to believe that we can take it as a clear symptom of a sea change in our collective definition of action. The first section of this lecture will review five successive connotations of the concept of design. In the second I will provide an introduction to Peter Sloterdijk's philosophy of design. And finally, I will end with a brief conclusion on how to draw things together, that is, to design.

As a concept, design implies a humility that seems absent from the word 'construction' or 'building'. Because of its historical roots as a mere addition to the 'real' practicality, sturdy materiality and functions of daily objects, there is always some modesty in claiming to design something anew. In design there is nothing foundational. It seems to me that to say you plan to design something, does not carry the same risk of hubris as saying one is going to build something. Introducing Prometheus to some other hero of the past as a 'designer' would doubtlessly have angered him. Thus, the expansion of the word 'design' is an indication (a weak one to be sure) of what could be called a post Promethean theory of action. This theory of action has arisen just at the moment (this is its really interesting feature) when every single thing, every detail of our daily existence, from the way we produce food, to the way we travel, build cars or houses, clone cows, etc is to be, well, redesigned. It is just at the moment where the dimensions of the tasks at hand have been fantastically amplified by the various ecological crises, that a non- or a post- Promethean's sense of what it means to act is taking over public consciousness.

A second and perhaps more important implication of design is an attentiveness to details that is completely lacking in the heroic, Promethean, hubristic dream of action. "Go forward, break radically with the past and the consequences will take care of themselves!" This was the old way - to build, to construct, to destroy, to radically overhaul: "*Après moi le déluge!*" But that has never been the way of approaching a design project. A mad attention to the details has always been attached to the very definition of design skills. And 'skill' is actually a term that is also attached to design, in the same way that design is associated with the words 'art' and 'craft'. In addition to modesty, there is a sense of skilfulness, craftsmanship and an obsessive attention to detail that make up a key connotation of design. The reason why this is a point worth remarking on is because it was unthinkable to connect these features of design with the revolutionary and modernising urges of the recent past. To the contrary, a careful attention to detail, craft and skill, was precisely what seemed reactionary as this would only have slowed the swift march to progress. The expanding concept of design indicates a deep shift in our emotional make up: at the very moment when the scale of what has to be remade has become infinitely larger (no political revolutionary committed to challenging capitalist modes of production has ever considered redesigning the earth's climate), what means to 'make' something is also being deeply modified. The modification is so deep that things are no longer 'made' or 'fabricated', but rather carefully 'designed', and if I may use the term, precautionarily designed.

It is as though we had to combine the engineering tradition with the precautionary principle; it is as though we had to imagine Prometheus stealing fire from heaven in a cautious way! What is clear is that at this very historical juncture, two absolutely foreign sets of passions (foreign for the modernist ethos that is) are having to be recombined and reconciled.

The third connotation of the word design that seems to me so significant, is that when analysing the design of some artefact the task is unquestionably about meaning - be it symbolic, commercial, or otherwise. Design lends itself to interpretation; it is made to be interpreted in the language of signs. In design, there is always as the French say, *un dessein*, or in Italian, *designo*. To be sure, in its weakest form design added only superficial meaning to what was brute matter and efficiency. But as it infiltrated into more and more levels of the objects, it carried with it a new attention to meaning. Wherever you think of something

as being designed, you bring all of the tools, skills and crafts of interpretation to the analysis of that thing. It is thus of great importance to witness the depths to which our daily surroundings, our most common artefacts are said to be designed. To think of artefacts in terms of design means conceiving of them less and less as modernist objects, and conceiving of them more and more as 'things'. To use my language, artefacts are becoming conceivable as complex assemblies of contradictory issues (I remind you that this is the etymological meaning of the word 'thing' in English - as well as in other European languages) (Latour, 2005a). When things are taken as having been well or badly designed then they no longer appear as matters of fact. So, as their appearance as matters of fact weakens, their place among the many matters of concern that are at issue is strengthened.

The transformation of objects into signs has been greatly accelerated by the spread of computers. It is obvious that digitalisation has done a lot to expand semiotics to the core of objectivity: when almost every feature of digitalised artefacts is 'written down' in codes and software, it is no wonder that hermeneutics have seeped deeper and deeper into the very definition of materiality. If Galileo's book of nature was written in mathematical terms, prodigiously expanding the empire of interpretation and exegesis, this expansion is even truer today when more and more elements of our surroundings are literally and not metaphorically written down in mathematical (or at least in computer) terms. Although the old dichotomy between function and form could be vaguely maintained for a hammer, a locomotive or a chair, it is ridiculous when applied to a mobile phone. Where would you draw the line between form and function? The artefact is composed of writings all the way down! But this is not only true of computerised artefacts and gadgets. It is also true of good old-fashioned materiality: what are nano- or bio-technologies if not the expansion of design to another level? Those who can make individual atoms write the letters IBM; those who implant copyright tags into DNA, or who devise nano cars which 'race' on four wheels, would certainly consider themselves to be designers. Here again, matter is absorbed into meaning (or rather as contested meaning) in a more and more intimate fashion.

The fourth advantage I see in the word 'design' (in addition to its modesty, its attention to detail and the semiotic skills it always carries with it), is that it is never a process that begins from scratch: to design is always to redesign. There is always something that exists first as a given, as an issue, as a problem. Design is a task that follows to make that something more lively, more commercial, more usable, more user-friendly, more acceptable, more sustainable, and so on, depending on the various constraints to which the project has to answer. In other words, there is always something remedial in design. This is the advantage of the "not only...but also" feature, although I criticised it above. This split is a weakness to be sure (there is always the temptation of seeing design as an afterthought, as a secondary task, as a less serious one than those of engineering, commerce and science) but it is also an immense advantage when compared to the idea of creation. To design is never to create *ex nihilo*.

It is amusing that creationists in America use the term 'intelligent design' as a rough substitute for "God the Creator". They don't seem to realise the tremendous abyss that exists between creating and designing. The most intelligent designers never start from a *tabula rasa*. God the designer is really a re-designer of something else that was already there - and this is even truer for His Son as well as for the Spirit, who both are sent to redeem what has been botched in the first place... If humanity "has been made (or should I have said designed?) as the image of God", then they too should learn that things are never created but rather carefully and modestly redesigned. It is in that sense that I take the spread of the word design as a clear substitute for revolution and modernisation. I do so furthermore, because there is always something slightly superficial in design, something clearly and explicitly transitory, something linked to fashion and thus to shifts in fashions, something tied to tastes and therefore somewhat relative. Designing is the antidote to founding, colonising, establishing, or breaking with the past. It is an antidote to hubris and to the search for absolute certainty, absolute beginnings, and radical departures.

The fifth and decisive advantage of the concept of design is that it necessarily involves an ethical dimension which is tied into the obvious question of good versus bad design. In the modernist style, this goodness and badness were qualities that matters of fact could not possibly possess. They were supposed to sit there, undisputable, and removed from any normative judgment. This was so much so that their entire purpose was to make the fact/value distinction possible. "We are there whether you like it or not". But it is easy to understand that when you say that something has been 'designed', you are not only authorised but forced to ask whether it has been well or badly designed. The spread of design to the inner definitions of things carries with it, not only meaning and hermeneutics, but also morality. More exactly, it

is as if materiality and morality were finally coalescing. This is of great importance because if you begin to redesign cities, landscapes, natural parks and societies, as well as genes, brains and chips, no designer will be allowed to hide behind the old protection of matters of fact. No designer will be able to claim: "I am just stating what exists", or "I am simply drawing the consequences of the laws of nature", or "I am simply reading the bottom line". By expanding design so that it is relevant everywhere, designers take up the mantle of morality as well. I will come back to this in the conclusion: suffice it to say now that this normative dimension that is intrinsic to design offers a good handle from which to extend the question of design to politics. A politics of matters of facts and of objects has always seemed far fetched; a politics of designed things and issues is somewhat more obvious. If things, or rather *Dinge*, are gatherings, as Heidegger used to define them, then it is a short step from there to considering all things as the result of an activity called 'collaborative design' in Scandinavia. This activity is in fact the very definition of the politics of matters of concern since all designs are 'collaborative' designs - even if, in some cases, the 'collaborators' are not all visible, welcomed or willing.

A small parenthesis on our two disciplines: when science and technology studies (STS) scholars began to revisit the old materialist traditions some forty years ago, they too would deeply transform objects into projects. They too had brought meaning into what was defined as mere 'material constraints'; they too had disputed the form versus function argument; transformed matters of fact into complex and contradictory assemblies of conflicting humans and non humans; they too had demonstrated that 'artefacts have politics' and that a parliament of things could be assembled. But because of the word 'construction' (used especially in the infamous expression 'social construction'), they too were divided by the modernist opposition between what was social, symbolic, subjective, lived and what was material, real, objective and factual. No matter how many efforts were made to escape the trap that the modernist constitution has laid in the path of empirical inquiries, science and technology studies has always lurched into it. (Would things have looked better had we talked of 'social design' instead of 'social construction'? I doubt it). The trap has been nearly impossible to escape. Impossible that is, so long as we remained officially modern. But what is so interesting to me is that, in the spread of design, this concept has undergone the same amazing transformations as my own field. STS, that was until a few years back but a small subfield of social (alas, alas, so social!) science, has now received the formidable support of a much larger movement. What was a slightly far fetched and a clearly scandalous claim, namely that there are no objects but only things and disputed assemblages, is now fast becoming common sense. Everything that was conceived of earlier as hard, objective, undisputable material drives (remember the "irresistible path of progress" "the white heat of technology?"), has now melted into air. Yes, everything that has been designed during the four or five former industrial revolutions has had to be redesigned - including Cornwall. It is the same material world, but now it has to be remade with a completely different notion of what it is to make something. What has gone is mastery - this odd idea of mastery that refused to include the mystery of unintended consequences.

Of course, all five of these dimensions of design as well as the development of STS could be taken as a clear sign of postmodernism, as a quiet and lazy abandonment of the tasks of Promethean modernism. Some diehard modernists do think that way, but I don't believe this is the case. As I pointed out earlier, the spread of the word 'design' doesn't come at a time when there is less to do; it comes at a time when there is more to do. Infinitely more, since it is the whole fabric of life that is now concerned, thanks to the ecological crisis. What no revolution has ever contemplated, namely the remaking of our collective life on earth, is to be carried through with exactly the opposite of revolutionary and modernising attitudes. This is what renders the spirit of the time so interesting. President Mao was right after all: the revolution has to always be revolutionised. What he did not anticipate is that the new 'revolutionary' energy would be taken from the set of attitudes that are hard to come by in revolutionary movements: modesty, care, precautions, skills, crafts, meanings, attention to details, careful conservations, redesign, artificiality, and ever shifting transitory fashions. We have to be radically careful, or carefully radical... What an odd time we are living through.

### **"Dasein ist Design"**

The best way to sum up the first part of this lecture is by quoting a marvellous pun made by Henk Oosterling: "*Dasein ist design*". Oosterling is a specialist of the work of Peter Sloterdijk, the great German thinker to whom I will now turn in order to continue this little meditation on the philosophy of design. By taking

seriously what Heidegger had only abstractedly meant by *Dasein*, Sloterdijk has managed to extirpate the Western philosophical tradition from the bifurcated way in which it has always dealt with materiality (always, that is, since the seventeenth century). This seriousness about *Dasein* is what makes his philosophy so exciting for people like you who are bombarded with offers to redesign everything from chairs to climates. You cannot indulge anymore in the idea that there are, on the one hand, objective material constraints and, on the other, symbolic, human subjective ones. (Actually, I feel that the organisers of this conference should have invited Sloterdijk to give this keynote instead of me, but my desire to visit a Cornwall I had only “imagined” until now, made me hide this proposition until tonight!) (Sloterdijk, 2005)).

The reason for why you should have invited him, is that Sloterdijk, very early on and very literally took on the spread in comprehension and extension of the notion of design. So literally, in fact, that he has been made the *Rektor*, that is the Dean or Master, of a School in Karlsruhe - the *Staatliche Hochschule für Gestaltung* (Gestalt being the word here for design). This is a tremendously original art, craft, and philosophy institute (that is housed, by the way, in the same revamped factory as ZKM, the place where I have been fortunate enough to curate the two exhibitions of ‘Iconoclasm’ and ‘Making Things Public’).

When we say that “*Dasein* is in the world” we usually pass very quickly on the little preposition “in”. Not Sloterdijk. In what? he asks, and in where? Are you in a room? In an air conditioned amphitheatre? And if so what sort of air pumps and energy sources keep it up? Are you outside? There is no outside: outside is another inside with another climate control, another thermostat, another air conditioning system. Are you in public? Public spaces are spaces too, for goodness sake. They are not different in that respect from private spaces. They are simply organised differently, with different architectures, different entry points, different surveillance systems, different soundscapes. To try to philosophise about what it is to be “thrown into the world” without defining more precisely, more literally (Sloterdijk is first of all a literalist in his use of metaphors) the sort of envelopes into which humans are thrown, would be like trying to kick a cosmonaut into outer space without a spacesuit. Naked humans are as rare as naked cosmonauts. To define humans is to define the envelopes, the life support systems, the *Umwelt* that make it possible for them to breathe. This is exactly what humanism has always missed. (This is why Habermas became so cross at Sloterdijk and launched a very mean attack against him: naked humans on the one hand, fully equipped humans on life support on the other - of course there was no way for those two German thinkers to agree with one another).

I hope you are beginning to see why Sloterdijk is your philosopher: in the same way as a space suit or a space station is entirely artificially and carefully designed, so are all of the envelopes that constitute the fragile life supports of humans. (Sloterdijk calls these “spheres”, and uses the term, “spherology” to name his endeavour.) Human are to be handled with infinite precaution from the womb (natural or artificial) in which they are grown (Sloterdijk defines philosophy as a kind of obstetrics!) all the way to the place where they survive and die. What is so important in the extended metaphors that Sloterdijk pursues to the bitter end is that they begin to accomplish exactly what I was asking for in the first part of this lecture. How can we reconcile the entirely different sets of emotions, passions and drives triggered by the two alternative great narratives of modernity - the one of emancipation (the official story) and the one of attachment (the hidden one)? When you check on your space suit before getting out of the space shuttle, you are radically cautious and cautiously radical...you are painfully aware of how precarious you are, and yet simultaneously, you are completely ready to artificially engineer and to design in obsessive detail what is necessary to survive. Whereas modernist or anti-modernist philosophies of history are always considering only one narrative (that of progress or the failure of progress), Sloterdijk is the rare thinker who shows how the stories of both emancipation and of attachment are a single story. This unification is possible, provided that you deeply modify what it is to be ‘in the world’: the cosmonaut is emancipated from gravity because he or she never lives one fraction of a second outside of his or her life supports. To be emancipated and to be attached are two incarnations of the same event, provided you draw your attention to how artificial atmospheres are well or badly designed.

The concept that is key for reconciling those two sets of passions and for inventing this strange role of a precautionary Prometheus, is that of explicitation. Explicitation is a consequence of the concept of envelopes. The envelope is a term that will surely draw the attention of architects and designers: we are enveloped, entangled, surrounded; we are never outside without having recreated another more artificial,

more fragile, more engineered envelope. We move from envelopes to envelopes, from folds to folds, never from one private sphere to the Great Outside.

Modernism, in the hands of Sloterdijk is no longer a concept. It is a place, a design, a style. It is a very specific type of architecture to which the whole second volume of *Sphären* is dedicated: that of Globes. A modernist is someone who lives under a vast dome, and who sees things as though sitting under a huge architecture, the globe of Science, the globe of Reason, the globe of Politics. For the modernist, the humanist is the one who reads a book under a lamp or who sits clothed in some sort of Roman toga on the stairs of a huge amphitheatre under the painted fresco of some immense dome... except that in the modernist architecture, the life supports necessary for this dome or this Globe to be sustainable have not been explicitated. A modernist takes for granted that there will always be air, space, water, heat, for the development of his or her 'global view'. But there is nothing global in globalisation. Global is always a lot of globaloney, a lot of hot air. And of course, blowing hot air also requires a mechanism of some sort, a pump, a hairdryer - a designed hairdryer! What happened in the second half of the last century is that modernism disappeared in the exact measure where the life supports were made more explicit, one after the next. Ecological crisis, in such a view, is the slow and painful realisation that there is no outside anymore. It means that none of the elements necessary to support life can be taken for granted. To live under a huge inflated Globe you need a powerful air conditioning system and powerful pumps to keep it inflated. Yes, modernist Globes have been deflated; modernism's fate has been somewhat the same as that of those dirigibles, like the Zeppelin or the Hindenburg.

So you see, what was called the 'modernist style' in design history should now be given a much more profound signification and a much longer life span. The very ways in which things have presented themselves as matters of fact, are now visible as a style - and a style that is changing under our very eyes. The aesthetics of matters of fact have always been precisely that: a historically situated aesthetics, a way to light objects, to frame them, to present them, to situate the gaze of the viewers, to design the interiors in which they are presented - and, of course, the politics with which they are (they were) so strongly associated (Latour, 2005b).

What I find so important in the notion of explicitation, of folding envelopes into envelopes, is that it is a powerful way of retrieving science and technology by completely modifying what is meant by a sustainable artificial life. It is really in that sense, that Sloterdijk is *the* philosopher of design. If earlier I have been correct in defining the five reasons why the notion of design was such a powerful substitute to the notion of making, building and constructing, explicitation might allow us to understand that it is possible to rematerialise without importing with the notion of 'matter' the whole modernist baggage of 'matters of fact'. This is exactly what Sloterdijk does. No contemporary philosopher is more interested in materiality, in engineering, in biotechnology, in design proper, in contemporary arts, and in science more generally. Yet when he deals with materialities it is not as if these were so many matters of fact that would inject indisputable natural necessity as the final word in some social or symbolic questions. Instead, when he adds materiality to a site, he is rendering another fragile envelope into which we are even more entangled, explicit. This entanglement is as relevant for the envelopes of biotechnology as it is for space stations.

This is exactly the reason why Habermas could not accept Sloterdijk's argument. For a good old modernist humanist, when someone begins to talk about life support, about the necessary conditions to "cultivate human beings", about the air-conditioning to have them breathe safely, this is a tantamount to a plea for an Orwellian world, for eugenism. What Habermas has entirely missed, however, is that when humanists accuse people of "treating humans like objects", they are thoroughly unaware that they are treating objects unfairly. A humanist cannot imagine that objects may be things, that matters of facts might be matters of concern, that the whole language of science and engineering might be portrayed as anything other than the boring carriers of the indisputable necessities that modernism has rendered popular. Humanists are concerned only about humans; the rest, for them, is mere materiality or cold objectivity. But Sloterdijk is not treating humans matter of factually as humanists claim. Rather, he treats both humans and non humans as "matters of grave and careful concerns". By treating human life supports as matters of concern, we pile concerns over concerns, we fold, we envelop, we embed humans into more and more elements that have been carefully explicitated, protected, conserved and maintained (immunology being, according to Sloterdijk, the great philosophy of biology).

This little shift in the definition of matter modifies everything. It allows practitioners to reuse all of the notions of materiality and of artificiality by freeing them from the restrictions imposed by the older

style of modernist matters of fact. In other words, we can have science and technology without implying naturalisation. Not only has nature disappeared as the outside of human action (this has become common wisdom by now); not only has 'natural' become a synonym of 'carefully managed', 'skilfully staged', 'artificially maintained', 'cleverly designed' (this is true especially of so called 'natural' parks or 'organic foods'); but the very idea that to bring the knowledge of scientists and engineers to bear on a question is to necessarily resort to the unquestionable laws of nature, is also becoming obsolete. Bringing in scientists and engineers is quickly becoming another way of asking: "How can it be better redesigned?" The bricolage and tinkering elements always associated with design have taken over nature. Actually, they are inherent in nature if we take Darwinian ways as a clever form of bricolage, of 'intelligent design'...albeit a blind one.

It is somewhat understandable that when Sloterdijk raised the question of how humans could be "designed", that is, artificially nurtured, this invokes the old phantasm of eugenic manipulations. But the similarities between these two projects prove to be completely superficial when submitted to a close examination. They are similar only in the same way that two trains can both be moving ahead, even though they are at an intersection that will lead them toward completely different destinations. Habermas missed the switch, the bifurcation that is so important for us to locate. Yes, humans have to be artificially made and remade, but everything depends on what you mean by artificial and even more deeply by what you mean by 'making'. We have returned to Prometheus and to the question of Creation. Are we able to be the God of intelligent design? This is the heart of the matter. This is why it is so important to talk of design and not of construction, creation or of fabrication. To design something as I indicated earlier, allows us to raise not only the semiotic question of meaning, but also the normative question of good and bad design. This is true of DNA manipulation, as well as of climate control, gadgets, fashion, cities or natural landscapes, a perfect case of design from beginning to end. Artificiality is our destiny, but it does not mean accepting the modernist definition of an artefact as the invasion of matters of fact over the softer flesh of human frailty forever. To put it even differently by alluding to another line of more fashionable thought: there is nothing necessarily post human in enveloping, folding, veiling humans into their life supports. Humanists as well as post-humanists seem to have no other repertory for speaking of science and technology other than the modernist idiom of matters of fact.

The great importance of Sloterdijk's philosophy (and I think the major interest of a designer's way of looking at things) is that it offers another idiom. The idiom of matters of concern reclaims matter, matters and materiality and renders them into something that can and must be carefully redesigned. This might be far from the humanists' limited view of what humans are, but it is every bit as removed from the post human dreams of cyborgs. What is clear, is that the collective definition of what artificial life supports are supposed to be becomes the key site of politically minded investigation. Nothing much is left of the scenography of the modernist theory of action: no male hubris, no mastery, no appeal to the outside, no dream of expatriation in an outside space which would not require any life support of any sort, no nature, no grand gesture of radical departure - and yet still the necessity of redoing everything once again in a strange combination of conservation and innovation that is unprecedented in the short history of modernism. Will Prometheus ever be cautious enough to redesign the planet?

I hope I have not been too far off the mark by proposing (out of ignorance, surely) these few steps toward a philosophy of design or by introducing Sloterdijk as its main contributor. I wish to conclude by offering a challenge to the specialists of the history of design assembled here. When I said earlier that there is something inherently normative in design because of the necessary follow up question, "Is it well or badly designed?", I also mentioned that this was a good handle for bringing in the question of politics. If the whole fabric of our earthly existence has to be redesigned in excruciating details; if for each detail the question of good and bad has to be raised; if every aspect has become a disputed matter of concern and can no longer be stabilised as an indisputable matter of fact; then we are obviously entering into a completely new political territory. As every one of you knows too well, it is the perverse character of all ecological questions that they branch out in all sorts of counterintuitive ways. It is probably of ecology that St Paul was talking when he said: "I don't do the good I wish to do and I do the bad that I hate". Political ecology is bringing political difficulty to the square. For according to this marvellous rather Paulinian quote of de Gaulle: "If of the good only good would ensue, and if of bad only bad ensued, government would be rather simple: a village parson could do it".

Let me raise the question of design, taken literally in the etymological sense of drawing or rather of 'drawing together'. How can we draw together matters of concern so as to offer to political disputes an

overview, or at least a view, of the difficulties that will entangle us every time we must modify the practical details of our material existence? We know that whenever we prepare to change our fixtures from incandescent to low energy light bulbs, to pay our carbon expenses, to introduce wind farms, to reintroduce the wolf to the Alps, or to develop corn based fuel, immediately, some controversy will be ignited that turns our best intentions into hell. And we are no longer able to stop the controversies by stating the undisputable facts of the matter because facts are constantly disputed. Fine, unintended consequences are now on everyone's mind, Prometheus braces himself for the worse.

Now here is the challenge: In its long history, design practice has done a marvellous job of inventing the practical skills for drawing objects, from architectural drawing, mechanic blueprints, scale models, prototyping etc. But what has always been missing from those marvellous drawings (designs in the literal sense) are an impression of the controversies and the many contradicting stake holders that are born with-in with these. In other words, you in design as well as we in science and technology studies may insist that objects are always assemblies, "gatherings" in Heidegger's meaning of the word, or things and *Dinge*, and yet, four hundred years after the invention of perspective drawing, three hundred years after projective geometry, fifty years after the development of CAD computer screens, we are still utterly unable to draw together, to simulate, to materialise, to approximate, to fully model to scale, what a thing in all of its complexity, is. We know how to draw, to simulate, to materialise, to zoom in and out on objects; we know how to make them move in 3-D space, to have them sail through the computerised virtual *res extensa*, to mark them with a great number of data points, etc. Yet we are perfectly aware that the space in which those objects seem to move so effortlessly is the most utopian (or rather atopic) of spaces. These are the least realistic spaces of circulation ever imagined. They are spaces that do not even fit with the ways in which architects, engineers and designers, draw and modify blueprints, nor with the process through which they direct fabrication on the factory floor or manipulate scale models. To use some more German: we know how to draw *Gegenstand* but we have no clue what it is to draw *Dinge*. I once asked one of the greatest historians of technology to send me what he considered his best drawing of the marvellously complex history of mechanisms he has been writing about for so long. He sent me some doodle which I would not have dared showing to my first year students, as an example of what a thing is. How could this doodle be compared to the comfortable and effortless manner in which objects float through the so called "Euclidian space" of a CAD design, or to the ways in which I can visit Falmouth before I arrive there through the apparently smooth travel of Google Earth?

I know this is a meeting on the history of design, but what would be the use of studying design history, if not for the purposes of providing a scheme for its future? There is much to suggest that the whole history of technical drawing and of scientific visualisations more broadly conceived, has been one of the main driving forces for the development of science and technology in its modernist version. It is more than likely that the same will be true for the development of science and technology, once freed from its modernist limitations. However, what history also shows is that we are a long way from being able to provide for things, that is for matters of concern, a visual, publicly inspectable space that is as remotely as rich, at least as easy to handle, and as codified as what has been done over four centuries for objects conceived of as matters of fact. As long as this *lacuna* remains there will be no way for design to ease modernism out of its historical dead end. To imagine that a political ecology, of the magnitude being anticipated by all of the experts, can be carried out without new innovative tools is to court disaster. New innovation will be absolutely necessary if we are to adequately represent the conflicting natures of all the things that are to be designed. (I take the verb 'to represent' here in the largest sense, including artistic, scientific and political representation techniques).

So here is the question I wish to raise to designers: where are the visualisation tools that allow the contradictory and controversial nature of matters of concern to be represented? A common mistake (a very post-modernist one) is to believe that this goal will have been reached once the 'linear', 'objectified', and 'reified' modernist view has been scattered through multiple view points and heterogeneous make shift assemblages. However, breaking down the tyranny of the modernist point of view will lead nowhere since we have never been modern. Critique, deconstruction and iconoclasm, once again, will simply not do the job of finding an alternative design. What is needed instead are tools that capture what have always been the hidden practices of modernist innovations: objects have always been projects; matters of fact have always been matters of concern. The tools we need to grasp these hidden practices will teach us just as much as the old aesthetics of matters of fact - and then again much more. Let me be clear - I am not advocating another CAD design for Prometheus. What I am pressing for is a means for drawing things

together - gods, non humans and mortals included. Why should this prove to be an impossible task? Why can the powerful visual vocabulary that has been devised in the past by generations of artists, engineers, designers, philosophers, artisans and activists for matters of fact, not be devised (I hesitate to say restyled) for matters of concern?

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# **Power of the network: transitions in working life from Taylorist time and motion to networked space**

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## **Abstract**

This paper will trace the rise of the network as both a practical and philosophical concept within office design over the past hundred years. It will draw upon a range of workplace and urban design theorists and practitioners, including Franklin Becker, Frank Duffy, Niels Torp, Peter Drucker and Jane Jacobs, to explore the three great modern waves of change in how offices are planned and designed. It will explore the Taylorist Office of the early twentieth century, an engine of US economic growth bristling with corporate sloganising and time-and-motion studies, and the emergence of the Social Democratic Office in Northern Europe, a light and bright postwar reaction to the darkness of Fascism and a reflection of the rising power of the white-collar unions. It will conclude with the third wave, the Networked Office, which is today reconfiguring time, place and space – and redefining the very nature of working life.

## **Introduction**

The conference theme Networks of Design has a special resonance for my own area of interest: the design of the office. The modern workplace is a site for networks of all kinds – human, material, social, technological, informational and hierarchical. In fact it is the intense inter-connection of different types of network within a particular physical space that makes the design of offices so challenging to accomplish. Although you can study historical precedents for the working environment from medieval and Renaissance times, the type of office I want to talk about in this paper has a history of little more than a hundred years. This is the office as an archetype of modernism, a by-product of the bureaucratisation of industry, its design template derived from the factory floor.

If you study the literature of the office, as Tricia Austin (2007) pointed out, you will discover that there are four main models that are commonly used to describe the modern workplace. The first is the economic model that sees the office in the context of efficiency, production, utilisation of resources and cost control. The second views the office as a polity, a place of power, rivalry, hierarchy, decision-making and politicking. The third model revolves around the idea of community, placing an emphasis on relationships, belonging, proximity and partnership. The fourth is the ecological model, inspired by Franklin Becker's studies of the ecology of the workplace (1995), which views the workplace in the context of population flows, interdependence and sustainability. As our perceptions of the office as an economy and polity have increasingly given way to the office as community and ecosystem, it is instructive to see how the underlying networks that support and sustain office life have also changed – and indeed how the concept of the network itself has grown in importance.

Dr. Frank Duffy (2006) of architects and designers DEGW has described three major waves of change over the past hundred years to suggest how the office environment has shifted from a visual metaphor for power of the corporation to an expression of the power of the network. Duffy identified the first wave as the Taylorist office of the early twentieth century, an engine of US economic growth bristling with corporate sloganising and time-and-motion studies; the post-1945 emergence of the Social Democratic office in Northern Europe, a light and bright postwar reaction to the darkness of Fascism and a reflection of the rising power of the white-collar unions, as the second wave; and the third wave as the Networked office, which is today reconfiguring time, place and space and redefining the nature of working life. In the transition over time from Taylorist time-and-motion studies to contemporary workstyles, the power of networks to influence how and where we work has grown significantly. I would like to address each wave in turn.