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Parallel Lines

The Meeting of Aesthetic and Network Theories in Post-Critical Design Practice

There are three parts to this talk. In 'Convergence' I will try to show how economic and technological advances are very much part of the fabric and a product of postmodern cultural life. In 'Reed's Law' I will explain what group-forming networks are and why they are an important development. In 'Practice' I will show several examples of how fluid group forming networks can impact our world and the way we practice architecture.

I-Convergence

I would like to start this talk by responding directly to the question posed by the conference: that criticism is possibly being '*suspended in the face of major technological and economic challenges*'. I find this particular articulation odd since I am of the firm belief critical theory and network theory—explaining recent '*technological and economic challenges*'—are merging thought processes that have evolved in parallel. It would be extremely worrisome for architectural criticism to be suspended at this critical juncture, when cultural and economic practices are converging. It is as if to say theory and criticism are isolated fields not related to advances in economics and technology; and that economics and technology have developed independently bereft of intellectual discourse. Technology and economics have always driven markets, but like architecture, they are very much a product of our cultural dialogue.

Relearning space

Technological advances in design are in desperate need for critical assessment, especially by architects who intimately understand space and the city. The dangers for '*suspending*' criticism are obvious to anyone who has languished in a

shopping mall, got stuck in an airport lounge, or faded away in a hotel atrium. Observing that we have not yet learned to recognize the supermodern world we inhabit, Marc Augé suggests we 'have to relearn to think about space.' Our basic misrecognition compounded with our inability to translate technology into socially constructive environments will continue to produce banal spaces. Instead of building new spaces examining the integration of communication tools for our social needs, most new spaces are designed to celebrate the latest surveillance or obnoxious entertainment appliances.

Technology as the Other

Ironically, it appears that we treat technology in space as the prototypical Other—but without the enlightened, critical approach we developed in the past decades. We tend to shun it, dismiss it, or treat it as the exotic in our midst—objectified, admired, or repulsed. Rather, and learning from the best practices of postmodern discourse, we ought to embrace the difference this alien force offers, even if it means the ultimate dismantling of our systems. It is as if we have become paralyzed, unable to formulate space or generate discourse that does not objectify the collision or predict our annihilation. Paul Ricoeur in another context describes this kind of confrontation, this sense of not knowing what to do, as a lull:

No one can say what will become of our civilization when it has really met different civilizations by means other than the shock of conquest and domination. But we have to admit that this encounter has not yet taken place at the level of an authentic dialogue. That is why we are in a kind of lull or interregnum in which we can no longer practice the dogmatism of a single truth and in which we are not yet capable of conquering the skepticism into which we have stepped.

It seems most architects practicing today look at advances in communication technology with skepticism. We are taking the wrong approach by distancing ourselves from these disruptive forces. Of course technology is to space not what Glasnost was to the Soviet Union or even a clash of civilizations. It is imperative however that we understand this force of change—which is perhaps not as rapid as some would like to think, even though we have witnessed some major disruptions—and not succumb to its charms like an orientalist at an indigenous ceremony.

Marginalization

At best, architects tend to fetishize recent technological devices without understanding their social potential by reducing their expression into the ubiquitous lobby screen or, formally, into meshed geometries and curvilinear surfaces. The rise of new forms clearly announces a paradigm shift. However, we should be careful to avoid a superficial understanding of this shift and repeat the innocence of our predecessors as they exploded geometries in an attempt to represent deconstructivist thought. While new forms may emerge, if these forms do not enhance our new social awareness, they become mere spectacles and compliant instruments.

Our responsibility, rather, is to understand the deeper impact of always-on communication and its political expression of space. Designers need to adopt the convergence of technological space with social space as part of their critical practice to avoid further complacency and marginalization. As our society is increasingly dependent on wireless networks, invisible or miniaturized devices, and always-on communication—think of the "missed call" phenomenon in Lebanon on which we have become so dependent to organize our life. The disruptive nature of the supermodern machine has merged with our physical body, increasing our autonomy and mobility and at the same time our desire to be connected with others. Marginalized communities like peace protesters, urban youth, and NGOs have all used these same networks to organize spontaneously and affect positive change to a considerable degree. Smart mobs have caused governments to fail and corporations to restructure their practices. So why can't architects take on disruptive technology and use it for creating spaces of resistance?

Affinity and resistance

It seems design practice chooses to ignore or fails to understand the intricate affinity between technological advances and postmodern thought. I think this is at the root of our paralysis as architects facing emergent demands by the market for 'smart' spaces. The Defense Advanced Research Program Agency of the United States Defense Department developed the precursor to the Internet in the early 60s at around the same time urban sprawl and the superhighway networks set out to disperse the modern metropolis. Darpa

in fact developed this form of distributed communication as another way to resist that ultimate modern paradigm, nuclear targeting. It would be difficult to imagine hypertext as the mainstream mode of communication before the Second World War, as long as we believed in the supremacy of the nihilistic *tabula rasa*. Le Corbusier for instance would have probably abhorred instant messaging as much he despised children or the premodern fabric of Paris.

Failure to understand

At the most basic level the Internet and pervasive computing are a direct result of our poststructuralist ability—and willingness—to think in a textual, multilayered manner. And more importantly, architects, steeped in the critical theories of the 70s and 80s, are more than capable in operating within such nondeterministic paradigms. Object oriented programming, hypertext, the open source movement, extended markup language (XML), are all a result of heated arguments within the computing community consciously aimed at disrupting the status quo and old authority. Like cultural critiques developed in the past decades, the tendency is to advocate the dismantling of authorship and hierarchies, increase heuristic readership and peer contribution, explore relations as textual and nonlinear, encourage plurality and collaboration, and build communities of resistance.

The theoretical work that evolved in linguistics, cognitive sciences, history and political science has allowed the convergence of many forces that parallels the work of the technologists and the network theorists. Working amongst programmers I discovered the same kind of discourse progressive architects entertained while practicing architecture. Communities of resistance amongst the software developer community in fact tend to be much more proactive than architects, constantly creating ways to resist monopolies through code sharing and open source movements that rely on networks to communicate and organize. Perhaps the failure of architectural practice to participate in the affirmative production of networked space is our increasing desire to be hypercritical about corporate production (the realm of economic and technological advances), leaving the field of spatial connectivity mostly to compliant designers, who have the unenviable talent of proclaiming their progressiveness by placing monitors in corporate lobbies displaying dulling brand

affirming propaganda. If there are architects out there who have successfully merged technological and spatial networks in a critical manner, they are too few and isolated.

Some like the formidable Diller and Scofidio are at once confirming and deconstructing the most telltale sign of ubiquitous computing—surveillance—with minimal invention within the physical space. In the Brasserie, the treads of the main stairs leading into the seating area are longer so people take their time on the steps and become the slow-motion subject of the natural—vs virtual—gaze of other customers. This seemingly nominal architectural gesture is an expression of technological power pervading the space of the physical. Rather than explore an alternative, affirmative subversion of this power, the stairs, and the monitor display above the bar, simply exacerbate the negative and obvious alienation of supermodern space. Regardless of its sublime intelligence, this kind of work has not yet reached the scale of disruption, critique, or reaction—or even widespread popularity—that the distributed and empowering music exchange platforms like Napster and Kazaa have been able to achieve in a very short period.

II-REED'S law

Point of Entry

It is my hope that in the remaining time I will be able to clarify a potential point of entry for architectural practice to engage in the production of networked place from a social dimension, and to bring in the lessons of critical theory (such as plurality, resistance, difference) into today's practice. First of all we have to understand the social impact of technology—what technology can do, not how it does it—and understand its economic imperatives, and then to translate its benefits into an architecture of change. Then, in the last section I will show how understanding this '*social life of information*' has major impact on at least three areas of concern: the way we organize our practice, the contracts we sign, and the form of the spaces we design.

Network Basics

To understand or be able to predict the future of society, we

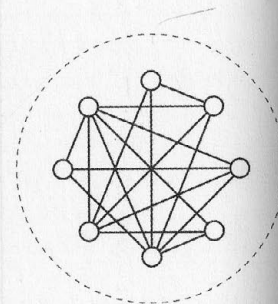
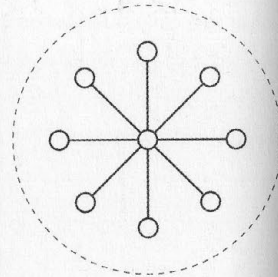
have to look at what the Economist calls the 'mathematics of networks'. What is common to the smart mobs in the Philippines, toothers on London trains, the I-mode thumb tribes of Tokyo, the botfighters in Helsinki and Stockholm, the multitude of Beirut missed callers, and the millions of peace protesters simultaneously gathered across Europe, is that behind these rapidly rising social groupings is an elegant 'mathematical imperative'. The *Economist* rightly predicted in 2000 that 'the new mobile high-speed communication and wireless Internet technologies will further accelerate the creation of fluid new groups.' 'Groups' is the key word.

Sarnoff's law

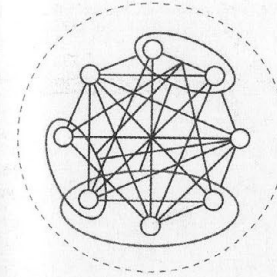
Let us start with a brief history of network theory, which is helpful here to set the context. The most basic model is the broadcast system, the classic hub-and-spoke, or centralized distribution network. We all intuitively understand this system from watching television or receiving radio and other broadcast information. Sarnoff's Law, named after the chief of RCA in the 70s, states that the more viewers join a network, the more valuable the network becomes. $V=n$: the more 'n's there are the higher 'V' is going to be. It is a directly proportional relationship, where V is the overall value and n the number of users, or nodes in the network. Cable television took that notion further and used subscription as a model based on this simple discovery to challenge the way we consume televised content. [Fig. 1]

Metcalf's law

In the 1980s when Bob Metcalfe, founder of 3Com, invented the local area network (LAN), familiar as the 'one-to-one' network, the building block of computer networking, he showed that the value of a decentralized system generates much more value than the hierarchical model of Sarnoff. A simplification of Metcalfe's law states that $V=n^2$ where the value of a distributed network is squared each time a new node is introduced. Moving from a top down broadcast model of communication to a peer-to-peer network, the Metcalfe model heralded the accelerated adoption of networked computing in 1980s and anticipated the arrival of hypertext and email as its mode of expression. Markets



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quickly adapted their systems to profit from this increased value, such as the rapid rise of keiretsu and other collaborative ventures like Wintel. This law made visible the disruptive potential of adopting distributed and decentralized systems, which helped the rapid proliferation of the PC and other new paradigms of communication, commerce, and corporate organization. [Fig. 2]

Reed's law

What the Internet brought that was lacking from the telephone and all other communication media is our ability to form groups. Making this observation, David Reed who is one of the inventors of the TCP/IP Internet protocols, a professor at MIT and currently at HP labs, set about to develop a mathematical model to understand this emergent behavior. A simplified version of Reed's Law states that $V=2^n$. It shows that when people in a decentralized system can communicate with individuals and groups as individuals or part of a group, the value of the network increases exponentially. Using the Internet we are able to form our own groups in an ad hoc, need-based manner, and these groups are fluid and temporary. We can and do communicate with more than one group or individual at the same time, without central authority or controls. According to Reed, new group-forming capabilities, such as reply to all, chat rooms, auction hosting, buddy lists,

enable, enhance, and sustain huge numbers of member-organized groups. The key thing about these groups is that they are freely formed—though various institutions, services, and organizations enable the group-forming, the choice of which groups are formed, who participates, etc is entirely up to the members who organize the group, and the purpose of each group is shaped largely by some common needs of its members.

Email, mobile telephony, texting, and networked communication have not only increased interaction between people and groups, but is also forcing new regulations, telecommunication corporate shakeups, while at the same time increasing overall value to users. As these forces are causing major changes in the way we watch television and talk to each other, surely they must have an impact on the way we practice architecture and the way we design spaces. [Fig.3]

Information vs Knowledge

To illustrate the power of group forming networks, think about the way we learn and share ideas. In the broadcast model, where learning is centralized, we tend to know only those things that are relevant to our needs, and data is readily accessible only through limited power structures. In the information age, epitomized with Metcalfe's LANs, we tend to think that we could know everything since our access to raw information became faster and easier. Today, with immediate access to experts and sources of knowledge at any given moment, we tend to say, 'I don't know, but I know where to get that knowledge.' We seem to prefer to have real-time access to knowledge and share that knowledge asynchronously through self-publication (blogs, personal web site, community groups, email) rather than hoard it as we become more and more collaborative in our communities and groups.

Fluttering

Perhaps the best illustration of this transaction comes from the 1999 film by the Wachowski Brothers, *The Matrix*, which most architects always seem to have seen. In the harrowing scene where Neo and Trinity in their attempt to rescue Morpheus end up on the roof of the skyscraper with nothing but a helicopter, Trinity connects by telephone with Tank, the group's operator in the real world, and asks him to download into her—for lack of a better term—the pilot program to fly the craft. Trinity's rapid eye fluttering as Tank downloads the helicopter pilot program belies the blissful buzz familiar to all of us when we are able to tap into our network to expand our knowledge and add value to our existence.

More examples

Let us look at other examples on how Reed's law can be applied in changing the way we consume, share, and design. Think about how we drink coffee. We pay pennies for a commodity like a bag of coffee beans but we are willing to pay top dollar for an 'experience' at an immersive environment such as Starbucks, Peet's, or Café Najjar. As we become more social, we move into environments that appear to add value to our experiences—and profits for the corporations who cater



this desire to their advantage.

Political discourse on democracy has followed a parallel pattern, from the dynamics of the agonistic space of homogeneity; through a liberal, or legalistic model most common today that shuns or absorbs difference (the epitome of which is President Bill Clinton's assertion to gays in the military, 'don't ask, don't tell'); and moving hopefully towards a more tolerant and discursive model that thrives on difference and constant change, the space of which we have yet to define convincingly. To design supermodern space, we have to recognize these distinctions of evolutionary democracy to even start thinking what this public space looks like, how we inhabit it and work in it. Understanding communication networks and using them responsibly could empower the discursive potential of different publics.

On the international level, nations need to adapt their approach for the acquisition of resources. Relying less on military power and moving away from colonialist adventurism towards unrestricted dialogue amongst peer nations and coalitions may prove to be the most effective means of sharing scarce global resources. Perhaps European, Russian, Chinese, and the global popular resistance to the Bush administration's '*momentum of inevitability*' towards the war in Iraq is also a cry for a much needed multipolar dialogue, that, if practiced, might yield higher value to all parties involved.

Even the way we interface with computing technology is facing a Reedian evolution, as we migrate from inscrutable massive machines towards the '*intuitive*' desktop computer, and most recently, the invisible and embedded devices we carry around and inside our bodies.

III-Practice

Gehry and the Mastermodel

Technology is a tool. There is no doubt about the instrumentality of advanced computer systems. But it is not enough to dismiss the power of new tools to understand their influence on our practice. Many years ago Frank Gehry adapted the Catia software system developed by Dassault Mirage to develop the design of fighter aircraft and missiles. Gehry preferred this tool amongst others for its ability to generate sinuous

three-dimensional form easily. The computer wizards in Gehry's office soon realized a more important capability: the ability to create a three dimensional model that allows easy collaboration across trades.

One of Gehry's ongoing (and noble) hopes is to bring back power to the architect. Gehry strongly believes that controlling form using advanced technology will allow the architect to reclaim the title of 'masterbuilder'. Not only is this nomenclature outdated but so is the model. Rather than regressing towards the Renaissance notion of the omnipotent masterbuilder, or reconfirming the expertise-driven modernist practice of the mastermind, genius architect, Gehry's technological innovations are bringing us closer to a Reedian expression of a future architectural practice thanks to collaborative software tools, many of which were first tried in Gehry's office, architects, contractors, clients, fabricators, financiers, insurers, and other experts can communicate freely and directly across legalistic barriers around a single, complex, and adaptable digital model.

The model itself is not a big deal, as most architects today work in digital formats. What is remarkable is that a model that is easily understood and modifiable by the various practitioners across trades allows all the users to come together around that model, without having to redraw the project each time a trade is involved. In other words, the 'mastermodel' allows the various experts to form ad hoc, task-based groups for each phase of a project. In this manner the architect can talk directly with the truss bolt manufacturer and jointly make necessary changes that are immediately registered on the mastermodel at any point in the process, and whose effect other project constituents can easily see as the work progresses.

For each phase of the project a new group forms, with new and temporary leadership emerging. As the project progresses, new groups appear and recede into the background, based on the tasks and expertise required for each step. The masterbuilder, rather than an embodiment of a singular architect, is in this way distributed amongst the trades and their subgroups. It is the mastermodel, in digital format, that allows all these trades to communicate, add, subtract, correct, edit, zoom in, zoom out, and engineer collectively—synchronously and asynchronously in the same geography or remotely—the project as it is built.

When the architect talks directly to the air conditioning manufacturer and when the truss engineer talks directly to the construction manager, and they all use the same mastermodel, the change in practice is exponential. According to Gehry's office, the MIT Stata Center was one of the first projects to fully adopt such practices.

The implications are immense, especially when it comes to issues of liability. In the current model of practice, the hierarchy of liability reflects the top down approach of the trades. If a truss breaks, the owner and the architect are the last to be sued, before them are the people who made the truss and placed it on site. In the mastermodel collaborative approach, since all the trades are talking to each other and speaking the same language, the liability is shared. Indeed, Gehry astutely convinced their insurance company to develop an umbrella policy that covered all the players more or less equally.

This is merely the beginning of the transformation of practice, based on the recognition that Reed's group-forming law, a theoretical construct that intended merely to explain Internet and email practice, will increase value and radically change the way we build as we move increasingly and inevitably towards complex peer networks.

Vocal Space

In my own practice I had to understand these forces of change when I was asked in 1999 to design the offices of Viant—the Internet consulting company I had joined a year earlier, headquartered in Boston with twelve offices worldwide—in collaboration with Gensler. Viant was adamant about remaining flat and encouraged collaboration across its multidisciplinary teams, composed of designers, business analysts and programmers. Bob Gett, Viant's CEO and a truly enlightened man, gave me one simple charge. His singular requirement or challenge rather, was that any one in the company should feel empowered to join any conversation anywhere and at any time.

Our team analyzed the state of workplace design using Reed's Law as the starting point, and soon discovered that office furniture companies and architects, in 1999 at least, were still fiddling with open plan office designs and improving cubicles. Our acceptance of Reed's Law led us to believe that

cubicles had to go for radical collaboration to take place, and that people moved around space autonomously and in groups in an ad hoc manner.

Mapping the evolution of networks to the state of workplace design, Sarnoff represents that hierarchical model of the modern office, exemplified today in many old corporations and in the Chiat/Day experiments of the 1980s. Metcalfe maps to the brand-saturated office, the visually privileged, anonymous space of the modern day office, the type Andersen Consulting optimized using the hoteling concept in the 90s. At Viant we came to believe that a Reedian workspace is one that encourages discourse and autonomous group expression in an unplanned and continuous manner, and we set out to define it. Encouraged by the potential of extended conversations across disciplines, we called Viant's new model for the radically collaborative workplace the "vocal space".

One of the primordial tasks was to listen to our audience. With Gensler we launched an online survey asking about one thousand Viant employees about the state of their office. Viant already lived in an open space environment equipped with social and lounging areas. We were eager to hear from the employees about their travails working in an open environment.

What emerged was not unpredictable. Of the 600 plus employees who responded, most of them wished they had private space for private conversation, and a place to show a team's progress such as a war room. We took these suggestions to heart and began to redefine our thinking keeping in mind the initial impulse to allow inclusion in all conversations. To reconcile these two seemingly contradictory positions opened the door for invention. Instead of breaking up the program into different rooms with specific functions, we opted to create spaces that allow the vocal expression of the teams. We felt that in a radically collaborative environment, the pressure for conformity should not subsume individual difference. We then broke up the spaces that we needed into three types: spaces that allow individual expression, team expression, and office/community expression.

For example in the first category, we noticed that the only place in the office where someone's name is publicly displayed is on their mailbox tucked away in the mailroom, along with a copier, piles of paper, a large recycling bin, and all sorts of storage material. If indeed successful teams depend on a



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clear and open dialog between peers, it became important to allow those peers a place for individual expression and reflection. In the first instance, we brought out the mailboxes into the public space of the office and allowed the employees to decorate their own mailboxes along loose guidelines. Originally, we included built in mailboxes with display monitors showing preloaded images of various employees and teams across the company at random with an email address. The idea was that on arrival, the employee enters the lobby where his identity is clearly marked, checking in by being acknowledged in the space he has marked, and seeing faces of employees that she may or may not have worked with on another project. So, on the moment of arrival, the Vianteer enters a familiar space and immediately acknowledges that she is part of a larger team that resides here and in the elsewhere, where she can easily communicate and reach out at her own pace and will. [Fig. 4]

The other instance, the individual expression, informed the design of the private rooms for private conversations. Converging the three strains of thought derived from the research of Dorothy Leonard and Walter Swap on the creative workplace, with our finding that employees needed private space within the larger context, and the desire for each office to develop its own personality outside the corporate diktat, we created the headsdwn space. The headsdwn space primarily provides a private area for private conversation. It is large enough to accommodate two people for an interview or dialogue. It does not have a definite architectural expression and has no specific location. In the Los Angeles office we strove to create a variety of these rooms to allow for diverse uses and appropriations. In one of the conference room clusters we placed four, three side by side on a raised platform and the fourth perched high in the ceiling truss. In order to create an opportunity for the spaces to express the office's idiosyncrasies, we were determined to involve the employees of that office in their furnishing. In each office we designed, we gathered the group and asked them to share with us things they like to have around them when they are working alone. As we compiled a list for each office, we chose randomly three items for each room in a particular location. In the Los Angeles case, for instance, one room ended up with sand floors, a lava lamp and sunflowers. The matrix and its results were invariably practicable yet unforeseen and comic. Viant offered a budget for each office to hunt down the items locally as construction progressed. The new headsdwn spaces finally offered a place for the creative 'incubation'

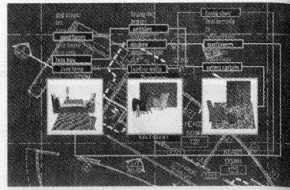
of information and ideas, a place where dialogue can take hold away from the fray, and a place that, in its own uniqueness, expressed the collective idiosyncrasy of a specific group of people. [Fig. 5]

These are just two examples of how group-forming networks can help generate new types of space in a collaborative environment. Note that the forms do not necessarily have any inherent technology in them. Embedding technological devices in these spaces were also included to ensure ease of communication and rapid deployment of groups. What was not clear from the beginning is that smart spaces do not depend on the availability of devices as much on their ability to facilitate the needs of ad hoc groups and individuals as they move about their daily tasks. In the end the design of the space emerged purely on understanding the social power of networks that advances in communication technology enable, and not the other way around; ie, they were not a result of building a space around the capabilities of the latest computational tools.

The Shape of Things to Come?

When it comes to the form of the postnetworked space, I am not sure that style is a factor. Think of Marc Newson's interiors, or the surfaces of Future Systems, or the radical shapes emerging from computer-generated acrobatics such as the recent work of RUR. While they can be appealing and beautiful, and in many ways an alternative to the nondigital work of the aging avant-garde like Koolhaas and Holl, I believe it is a mistake to think of them as the ultimate shape of things to be. Recall the exploded fragments that emerged in the early stages of deconstruction, or the folds that tried to emulate the thought of Gilles Deleuze and Félix Guattari. These forms were merely literal translations of a liberating social critique that took years to mature and express the sense of freedom and textuality from the deterministic models of the Enlightenment. Understanding technology may at first express itself with radical form, fulfilling Marshall McLuhan's dictum that the medium becomes the message.

While there are several design fads to watch out for, and many are seductively charming, one of the most engaging form-making techniques using recent advances in technology is known as emergence. While it is outside the scope of this paper, suffice it to say that emergent systems are decentralized organizations that are found in nature. The way ants



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organize, or geese fly, follow some of the simple rules that we are now applying to video game design such as the Sims. An emergent system is a complex system that is created by the application of simple rules that govern the behavior of the autonomous units within the group. Each unit, makes its own local decisions based on a local understanding of its own context, like an ant reading chemicals from other ants and adjusting its behavior accordingly. When added up, the ant's microbehavior affects a discernable macrobehavior or pattern for the entire organism—such as building a colony or foraging for food—that could not have been predetermined by the individual unit. Experiments in simple-rule programming are generating unexpected beautiful forms that replicate similar behaviors in nature. We have yet to see how architects can adopt these complex systems into spatial configurations that bring in beauty and meaning into our lives. Ciro Najle's group at the Architectural Association in London is exploring ways to operationalize these computational theories into creating what he calls the 'machinic landscape'. While Najle is explicitly attempting to provide alternatives to current architectural practice and discourse, I expect to see more and more formal experimentation in this field.

Conclusion

Tapping into networks is certainly not a new thing. In describing the Cyborg self in the networked city, Bill Mitchell proposes that we, as biological beings, have always had networks that we interface with. Starting with our constitutive networks—nerves, blood, circulatory, reproductive, etc—we are moving plumbing systems. The interface for these systems has always been architectural, best expressed in the film Brazil or in the exteriority of the Pompidou Center in Paris. We plug into the sewer network synchronously when we flush the toilet, and we store our genes in the sperm bank for later fertilization in an asynchronous manner not dissimilar to responding to email. Mitchell argues that technology merely expands this network, invisibly yet more powerfully. Today, my personal network is like a skin that meshes me into the fabric of the city, allows me to peer into private space as well as public space, to sense and feel and even smell—pollen, chemical gas—remotely, as well as delegate to the network, as in Reed's groups, Trinity's blissful experience, or a simple calculator; whenever I need to expand my knowledge and expression.

This ubiquitous sentience, represented physically in the

increasing convergence of bits and atoms as motes and wearables, augmented and virtual reality, poses difficult questions about the self and solitude. While many of the inventions and research conducted these days are, in the end, prosthetic devices attempting to address increasing solitude (such as health monitors for the elderly) as well celebrate autonomy, the image of the self that is emerging is similar to Lacan's description of the baby before misrecognizing itself in the mirror. Could this blob mentality —represented in increasing blob designs, organic, sensual form? —be our reading of a new subjectivity? Is the regression into the premirror stage a liberation from the delusion of absolutist subjectivity? Is this form of freedom also a cause for alarm: are we less able to control our movements, our impulses and our interactions? Reed's law shows an affirmative dimension where we can maximize value through constant collaboration and communication, allowing the self increased value while in a state of constant flux, knowledge exchange and geographic dislocation.

The rise of smart mobs and always-on connectivity are strong cases of increased freedom and negotiating power of spontaneous groups. They are accessible to anyone, depend on peer reviews and feedback loops to perform, and avoid the necessity of a centralized authority. How do these new advances and our recognition of group forming as a positive capability help us add to the wealth of architectural theory, create architectural form, and organize our ever marginalized practice? I strongly believe that our understanding and embracing of collaborative technology could bring architects back as agents of change into the decision making process already governed by economics and technology. Frank Gehry's mastermodel, AutoCAD and other collaborative software such as Groove, and Viant's approach to the workplace are exemplary moments of the connected and group-friendly future of design.

In the end, the Cyborg we are designing for, meshed fully within the urban and political network of society, is neither the Vitruvian self at the center of the universe, nor the indifferent, conniving robot seeking to control our lives. It is simply you and I as we are today.