

From Connectivity to Collectivity:
Design for Increased Social Agency

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INTRODUCTION

During my formation as a graphic designer in the early nineties, I had the privilege to experience the outbreak of the digital medium as a new communication paradigm. Its emergence produced deep changes in my education at many different levels. Students started formulating new questions about the reach and scope of design while struggling to understand the implications for information in this new realm. We had to change the way in which we understood our design assets, besides learning the new means of production demanded by the dissemination of personal computing in the design industry. But one of the most important challenges we experienced as designers was the fact that we had to redefine the meaning of publishing as we raised our awareness of the increasing interconnectedness and visibility of the new medium, namely the Web.

In graphic design (or communication design), the concern for producing meaningful, rhythmic and consistent sequential continuities was displaced into a different set of considerations by the appearance of hypertext. Hypertextual structures required a different design approach, much more focused in the value of the discreet communication units and their potential ability to reassemble in different possible ways, conforming every time a different sequential result determined by the interaction of the reader. Our mental model of a publication shifted from the stream or musical score metaphor —appropriate for print medium— into a topological space of semantic connections, a space of arrows and boxes; we designers started organizing content through hierarchical taxonomies; so we had to implement site maps to help us design the navigation structure for our websites. These two mental models were wildly different one from the other. Suddenly, the reader was provided and empowered with a whole new different aura, he could articulate his own sequence every time, he was the author of his own reading and the new digital design supported and celebrated this new idea. Our former focus in the poetics of form had to consider the new complexity of reaching readers — now *users*— from a stronger rhetorical perspective, embracing a user-centered design approach. Preliminary design research had to shape the inquiry around the needs, cognitive skills and embedded behaviors of the

end user. Furthermore, the act of the user shaped and determined the final form.

As years passed, web services became more robust and were primarily concerned about fulfilling the expectations new users had for the Internet. New information structures allowed specific reader communities to organize their own content in more sophisticated collaborative systems. People were now able to share their personal organizational criteria. Former centrally-determined website taxonomies were now re-implemented as constantly evolving user-defined folksonomies. By these means, Internet services allowed the raise of a new voice, the voice of its own community of use. The resulting interaction from these dynamics was the natural swarming of people into communities that shared same vocabularies, interests and practices.

Today, even more services are available to us. At a steady rate, digital media is offering new forms of participation, collaboration and new ways of establishing social relationships. In the near future, network computing will be fully mobile and embedded; it will be everywhere, and its ubiquity will reduce all distance between people and their information sources. All of this is accompanied by the current trend of empowering people even more by assigning them more protagonist roles¹ in the shaping of information. The former communication model used by mainstream media of 'one to many' is shifting towards a new 'many to many'. Information and communication technologies (ICTs) are continuously pushing towards a more connected networked society.

Nonetheless, we must distinguish between enhanced connectivity and enhanced collectivity. Merely because digital media is making people more connected does not mean it is increasing the degree of their social engagement. According to Robert Putnam [2000], there is evidence of declining civic and social participation in modern society, which has become less cohesive. He argues that intertwined with this declining civic involvement there's a decline in collective and social activities, from family dinners to participating in clubs. Symptomatically, nowadays young people feel less inclined than their elders to engage as citizens in the rituals of voting and following news about world events and public affairs, people feel less commitment for contributing in their communities and instead engage in more consumptive attitudes for self-satisfaction. As a whole, society appears increasingly depressed, where most indicators of ill-being, such as

¹ This can be seen in online newspapers that are migrating to more dynamic layouts determined by the way readers are commenting and voting on different articles. They allow personal customization and even allow people to submit and comment their own news.

suicides, psychic disorders, divorce, loneliness and the like, are widespread and increasing [Hunout, 2003].

On the other hand, we have extreme sharing networks, where people give away information, expertise, and advice without any monetary compensation. People submit documents, code, music, images and video files in settings that allow for such contributions². Still, the openness of the virtual space reinforces narrow group identities as archipelagos of disconnected islands [Terranova, 2004]. This extreme form of social filtering fosters micro-territories of interest-based communities. The world seems to be dividing between an enthusiastic and interconnected minority and a nihilistic, more passive and manipulated, mass of TV consumers.

While western societies are getting economically and technologically prosperous, with better life standards, our social capital³ and civic cohesion keeps declining. This is what some scholars call *'the western paradox'*. What Tocqueville celebrated less than two hundred years ago as the strength of American society, today is fading away. Modern individualism encourages people to think that they can find happiness and self-accomplishment without the community, instead of finding them within the community.

Can Design help transform increased connectivity of social networks into increased socialization, civic participation, and a greater sense of individual and collective agency? Can we take advantage of the connective and associative power of communication technologies and inject it into social communities? These are the questions I pursue in this paper. To anticipate my argument, I will answer that design CAN perform these transformative functions on the majority of users of communication technologies today. However, to do so, the design community must itself have consciousness in the complexity of designing social interactions by understanding the potential that is already embedded in the ICTs as well as the integrative and ethical norms that must be applied if new media is to reach its full potential as a positive social force.

The present paper is structured in three layered parts. In Part One I address the individual level of interfacing and meaning-making. Here I examine the informational setting in which we move in and how the network has shaped our understanding of the world. In Part Two, I will look

² Examples of these services are uncountable; services such as Flickr [<http://www.flickr.com>], YouTube [<http://www.youtube.com>] or Digg [<http://www.digg.com>] are among the most popular. All web resources under a Creative Commons License would fall into this category, including a wide variety of academic journals and classroom material.

³ Social capital is defined here according to Putnam's definition: "*an instantiated informal norm that promotes cooperation between individuals*".

at our mediated interactions in the network paradigm, in order to understand our embedded agency as constructors of our digital environments. In Part Three, I will talk about how the web shapes our participation and enables a different kind of social agency.

	Part 1	Part 2	Part 3
Space	Language & Perception	Communication & Transactions	Expression & Action
Problem	Irrelevancy of the near	Irrelevancy of the other	Lack of Agency
Design Approach	Design for shared perspectives Design for integration	Design for dialogue Design for malleability	Design for openness Design for agency

Table 1: Structuring framework.

PART 1: **PERCIEVING OUR SURROUNDINGS**

Interfacing with a computer several hours a day has become very common to many people. Intense interaction takes place in front of the computer screen; furthermore, the screen has become a very important part of our lives. Our cultural framework has adapted to the information milieu provided through our networked screen. On our daily routines, we are exposed to an enormous amount of information that varies in depth, quality and veracity. For this reason, we have developed certain strategies for overcoming this informational overflow. For the purpose of understanding the world in which we live in, we use our digital interfaces for augmenting our cognitive process and for optimizing our limited attention: we read our preferred and trusted blogs, trusted news repositories, we get subscribed to specific news feeds or even to particular tags, we use services that manage our social networks, we belong to email listings, special interest groups, and the list goes on.

Our perceived informational space is shaped as a fuzzy and evolving *information cloud*. This is what Thomas Vander Wal [2005] calls our *infocloud* and it consists of what we organize, retain and would like to keep and access across devices, across contexts and across life. This infocloud operates as a custom framework for prioritizing, filtering, managing and sharing information with others. We create our context, and by doing so, we deeply influence the meanings of the things around us.

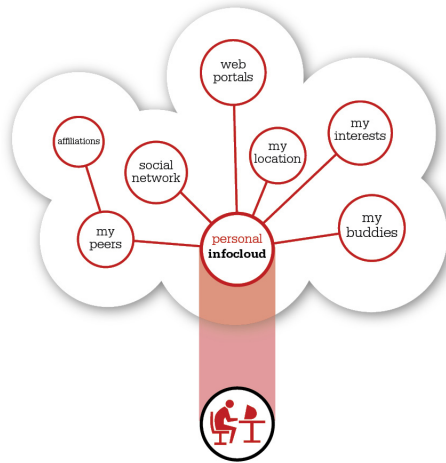


Fig. 1: Our cognitive framework for prioritizing, cataloguing and accessing information across devices, across contexts and across life. **The Infocloud**, model adapted from Thomas Vander Val, *Clouds, Space & Black Boxes*, Berlin 2005.

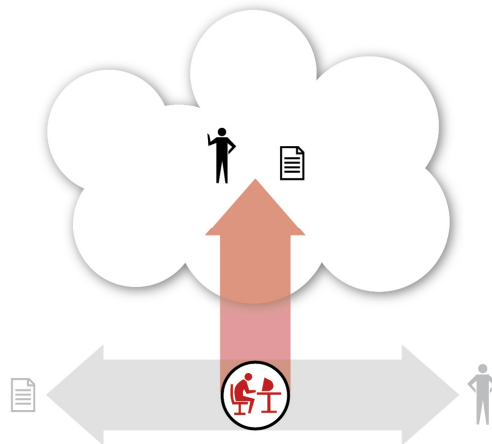
Dean Barnlund [1979] argued that human beings have a basic necessity for meaning, and from this need, we develop a personal and subjective structure of categories and symbols that we overlay to the world as a way of overcoming the rawness and meaninglessness of the world we live in. He called this cognitive survival kit our *assumptive world*. Nowadays, this cognitive kit has been formalized and objectified by different pieces of software, system preferences, subscriptions and visualization tools⁴. Our individual point of view is aided—and somehow augmented—by the reach and scope of this self-constructed framework. Our daily interfaces provide us with a personalized framing for monitoring what we consider to be relevant in the world through data-mining and filtering services⁵. We see through our particular languages and through our particular metaphors for representation; the resulting knowledge is embedded not only in documents or repositories we gather, but also in our personal organizational routines, processes, and frameworks that we acquire by interacting with the system; and in that way, the system can also learn from us.

⁴ This listing is by no means extensive, but illustrative of what components build our personal infocloud.

⁵ An example of this can be found at Google Coop, where users build a personalized search engine. [<http://www.google.com/coop>]

IRRELEVANCY OF THE NEAR

This information-centered perception of the world has deep consequences in how we understand and assign meaning to space and distance. It is commonly said that modern communication technologies have supposedly brought the death of distance. While this might be true in the context of synchronous communication technologies and ubiquitous Internet, it may be slightly more complex when we think in the distance between people and knowledge. Since we have a unique interface for engaging with people, knowledge repositories and media in general, we have overlaid and confused physical distance with epistemological distance. This different kind of distance refers to how knowable something is in relation to our infocloud. Epistemological nearness is conformed by those artifacts that can be reached easily through our personal information network defined by our newsfeeds, trusted blogs, subscribed tags, social network, etc. Epistemological nearness is represented by those artifacts that we are familiar with and we are prepared to understand well based on previous experiences and cultural capital. On the other hand, objects that



are epistemologically far are those foreign and completely irrelevant to us.

Fig. 2: The epistemological proximity provided by our infocloud gets overlaid physical distance that appears to be more irrelevant.

Ulises Mejías [2005] argues that modern ICTs have transposed the degrees of relevancy between the near and the far. Things that are epistemologically far can be physically right next to us. Similarly, things that are physically far can be epistemologically near, and appear relevant. In other words, ICTs have brought the death of distance of the physically far by making our immediate surroundings more irrelevant to us.

This argument elucidates in part why enhanced ICTs may have a negative impact in the promotion of physical communities, such as strengthening the relationships between friends, neighbors, relatives or workmates. The Internet may be keeping people from engaging in true communities because online interactions are inherently poorer than face-to-face—or even phone—interactions. Online ties may be less capable than offline ties to cultivate rich friendships, provide intangible resources such as emotional support, and provide tangible material aid. In this sense, although ICTs support strong existing relationships they fail to foster new connections based on physical proximity.

Disembodiment of interaction in the digital space is pushing towards a divorce between the digital and the physical. In a normal day, we surf the web searching for relevant information, send emails to colleagues and relatives, use IM to reach peers and even publish content in our blog. The anxiety derived from this intense interaction may not be determined by the large quantities of information and data we need to process but might be caused by the missing connection between physical and online experiences. What is at stake, then, is our ability to turn the information we cope with in the digital realm into something that we can apply meaningfully in our regular interaction with our physical surroundings. Even further, we could portray this watershed as an ontological disintegration between physical and digital. Our physical interactions don't have any repercussion in the digital realm and vice versa. What we do online tend to stay online: actions begin, unfold and conclude entirely divorced from physicality. Also, the lack of physical awareness of the Web diminishes the heterogeneity of our local settings, while homogeneous disembodiment prevails as a conventional stance in our networked lives.

DESIGNING FOR SHARED PERSPECTIVES

A very successful design strategy for strengthening the connection among web users has been to allow the emergence of shared cognitive frameworks. This trend, widely adopted by the so-called *Web 2.0* services, encourage the consolidation of shared perspectives and representations, it is about creating tools for allowing people to see through each other's eyes, as a way of sharing cognitive models instead of finished artifacts.

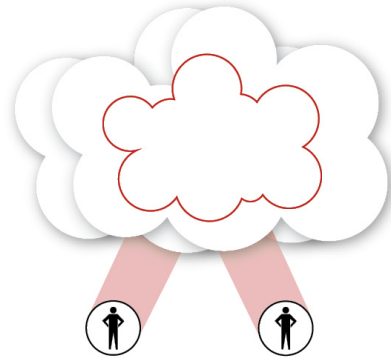


Fig. 3: Designing for shared perspectives, a strategy for overlapping perceptions.

An example of this approach can be seen at *del.icio.us*⁶, a social bookmarking service. The act of selecting and reading formerly understood as a personal consumptive activity, is now transformed into a productive and shared enterprise. Readers, by the mere act making sense out of their selected resources, can modify their information landscape by sharing it with others. This model has been widely replicated through the Web as the folksonomy, which is a bottom-up organization strategy for cataloging information upon the emerging people's lexicon and it has mainly been used as an evolving navigation taxonomy. What is interesting about this approach is that it identifies our selection in consumption as an inherently productive activity. People produce ways of consuming, which can be shared with others in ways of framing, understanding or recommending. This vision also leads to the consolidation of communities of interest.

⁶ Del.icio.us [<http://del.icio.us>] is an emblematic example of people-driven classification system. In this service, users are able to tag selected web pages with custom keywords. The act of tagging is a very basic annotation, done with the intention of adding a personal handler to the new information. The value of personal tagging in digital communities is about keeping independency between (a) the person tagging; (b) the object being tagged; and (c) the tag being used on that particular object. If we know the tagged object and the tag word, we are then able to find other individuals who use the same tag on that object. This may lead —with a little more investigation— to somebody who has the same interest and vocabulary as we do.

The power of the observer lies in the creation of a consistent personalized context, in the way in which he or she models the process of acquiring information. This process is of symmetrical importance with the way in which information is produced afterwards. In this sense we could assert that *impression* shapes *expression*. The evolving context generated by our infocloud is what finally shapes the world in front of us and determines how we get meaning out of it.

Early cartographers invented the abstraction of the point of view; maps were the tangible product but the true invention was the 'flying point of view' and the technique associated with inferring how the world would appear from such a celestial standpoint. In this sense, the desire to witness the wholeness of the world removed the spectator from his body and placed him in an omnipresent ether.

Modern visualization techniques follow this idea of placing the observer outside the object at stake, giving him enough distance in order to grasp the big picture. There are multiple visualization languages we are getting familiar with, such as graph representations, tag clouds, flow diagrams, chronograms, tree maps among many. But what we need to consider is that our infoclouds are in fact gateways for understanding our context and are potentially subject of visualization as well, since they exist as formal digital constructs. What I'm trying to argue here is that our infoclouds — even if they contain private information we don't want to share with others — are probably the best communicable artifact from which we could leverage deeper empathy with others, as a way of letting others virtually stand in our own shoes and witness the information milieu through our eyes.

DESIGNING FOR INTEGRATION

The early debate on the Web [Terranova, 2004] was dominated by the image of a cyberspace in which users would lose consciousness of the real world and loose themselves in a universe of synthetic forms and abstract perspectives, totally immersed in a virtual reality interfaced through data gloves, goggles, embedded microchips and electrodes. Although this interfaces didn't reach the general public given the high cost of the technology involved, they where hardly criticized [Baudrillard, 2002] as virtual reality announced the disappearance of the real by the substitution of the virtual.

Digital space is commonly defined in an opposing relationship to the physical, as a virtual simulation that has been dangerously presented as an alternative substitution —sometimes even the corruptor— of the real.

Nowadays, popular culture has adopted a less critical stance and use virtuality as a space for creating social networks, simulated worlds with online avatars and the like. Although the web as a space allows for the emergence of new social bonds around communities of interest, it's still quite dislocated from physical transcendence and social agency of physical communities. As I argued earlier, rarely online interactions transcend as on-site relationships; the physical place is no longer relevant in the context of ubiquitous computing since what we are experiencing now is person-to-person communication instead of place-to-place. Wellman [2001] defines this social model the networked individualism, were people have become the portal.

Undoubtedly face-to-face communication is the richest possible interaction among human beings: it's situated in a dynamic environment that constantly generates the context necessary for understanding human communication in depth. Physical interaction provides the contextual cues of the conversation so we can realize if we are joking, being emotive or sarcastic. On the other hand, the Internet's lack of communicative richness can foster contact with more diverse others, but the lack of physical cues makes it difficult to find out if the other online party is similar to us in some way beyond the subject matter at stake.

Design strategies for integrating the physical and the digital emerge from understanding user's contexts as opportunities for further dialogue. If the digital artifact is situated in a context that two of users share, then their epistemological distance will be shorter. In addition, if the context of the artifact is also connected with locality (through a geo-tag or because it points to a physical object or location near us), chances of transcending the digital watershed are greater.

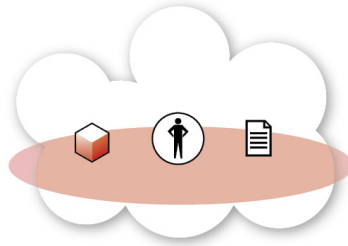


Fig. 4: Designing for integration between the physical and digital through situated interaction.

Nowadays, ubiquitous computing (*ubicomp*, or pervasive computing) is leveraging the tools and techniques for integrating computation into the environment. The core assumption of this strategy is that by embedding computation into our surroundings we would be able to move around and interact with the network more naturally, and therefore, *ubicomp* will allow situated interaction by considering the user's environment as a key shaper of the dialogue. This approach strives for the creation of 'context aware devices' that, by introducing our locality to the computing algorithm, will raise the relevancy of the near by anticipating our circumstantial and located needs.

On the other hand, we can see very successful web services such as *Craig's List*⁷ or *MeetUp*⁸ that increase the relevancy of the near by connecting neighbors through social or commercial opportunities. These services, especially *MeetUp*, help people find others with same interests that live physically close. Then, people are encouraged to meet face-to-face upon a regular basis, and form local communities with digital ties.

⁷ Craig's List [<http://craigslist.org/>]

⁸ Meetup [<http://www.meetup.com/>]

PART 2: **COMMUNICATIONS AND TRANSACTIONS**

The proliferation of ICTs has created an ever-expanding space of interconnected resources that are quickly absorbing and converting older means of communication into the digital standard. Practically every physical medium of communication has developed its digital equivalent. People are enthusiastically adopting them by incorporating new digital products or services into their lives. But beyond media, human interactions in general have found a satisfying correspondence in the digital realm; from banking to vacation planning, from political activism to gossip, from e-commerce to e-learning; every single interaction that takes place on the Web is apparently fulfilling the need that physical interaction addressed earlier.

The Internet was conceived —and has evolved— as a network of networks, a topological formation of interrelated protocols that have survived scalability and changes of hardware over time but has kept its core principles [Terranova, 2004]. These basic principles are characterized by a tendency towards supporting differentiation of artifacts (or formats) as well as a divergence of purposes, raising the problem of standardization⁹ and striving for the production of a *common space* that is ready to absorb and articulate media resources as well as the operations we can do over them through its transactional protocols. In this sense, the Internet is more than a medium among many but a kind of global meta-structure that can support global communication in a unified frame. In this sense, we can talk about the convergence of technologies in a paradigm that is based on flexibility, reconfigurability, reversibility and fluidity.

⁹ The World Wide Web Consortium (W3C, <http://www.w3c.org/>), founded in 1994, primarily pursues its mission through the creation of Web standards and guidelines and refers to this goal as “Web interoperability”.

NETWORKED FORMS OF COMMUNICATION

From the design perspective, we need to determine whether our online experiences can be evaluated as having a positive or negative impact on our lives as members of specific communities, understanding and valuing the continuity of action and cohesion of communication between the physical and the digital.

As described in Part I, our infocloud provides the entry points necessary for engaging in a networked form of interaction. In this sense, the logic of the network is built upon nodes, which represent the artifacts of the network we can act upon. This architecture privileges the artifacts over anything else and in this sense we can distinguish two general modes of networked communication: communication *with* and communication *about*. [Mejías, 2005], Fig 5.

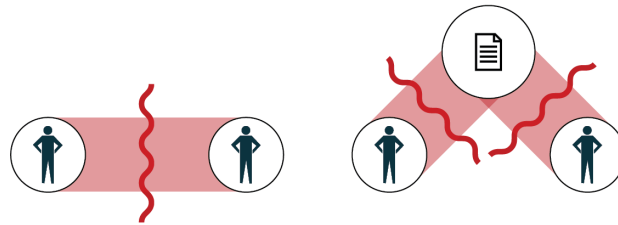


Fig. 5: Communication *with* (left) and communication *about* (right).
The nature of the network overprivileges the node, therefore the most pervasive mode of communication is *about*.

Communication *with* takes place in the form of a dialogue, where we recognize the counterpart as we make it relevant to the course of communication by engaging it *in* the discourse. On the other hand, communication *about* takes place in the form of an alternated monologue where the main focus is the mediating artifact rather than its creator, any other possible counterpart will be merged as subject of the communicative act and will remain secondary.

To make this distinction clear, let me pick two examples from the Web: *Wikipedia*¹⁰ primarily takes place as a form of communication *about* because the contributors of a specific article don't address each other in direct conversation in order to elucidate which would be the best for the article at stake but instead, place and overlap each other's contributions in such a way that they are constantly mediated by the construct itself. The

¹⁰ Wikipedia, [<http://www.wikipedia.org/>] multilingual, Web-based free-content encyclopedia project. Wikipedia is written collaboratively by volunteers, allowing most articles to be changed by almost anyone with access to the Web site.

article in question operates as a boundary object for consensual agreement. The main focus of the conversation is not determined by the emerging relationship of its contributors but by the quality and accuracy of the resulting article. Communication *with*, on the other hand, can take place in settings such as blogs. While the starting point is clearly still *about* something, the conversation can quickly unfold from the subject presented by the blog post into a public discussion where the participating voices recognize each other, where readers and authors merge as a dynamic and evolving community and where personal points of view are addressed and commented. Most clearly, communication *with* takes place in all forms of synchronous communication, such as IM or VoIP.

According to Barry Wellman [2002], the Internet engages people primarily in asocial activities that follow the *about* mode of communication, which are mainly focused in satisfying individual needs. Although online communities can be very specific, like rare martial art groups, comic fans or gamer networks, their ties are socially weak as they interact simultaneously with many other interest groups with no explicit geographic connection. In concrete terms their social agency is not likely to transcend their narrow group that often only exists in the digital space. This is what Wellman defines as *networked individualism*: “extensive involvement with the Internet apparently exposes participants to scattered situations that weaken their sense of community because interacting with a range of different groups make people feel more matchless” [Wellman, 2002].

The graph paradigm is a very powerful visual metaphor for explaining networks: it is open and scalable. The problem is that it transforms everything into a node; everything gets *nodified*. Knowledge is turned into information which is turned into a file. Files are transferable, sharable, achievable and even sellable. This trend has been harshly criticized, arguing that by digitizing everything we are turning knowledge into a commodity. Pushing that criticism forward, what about people? People create digital representations of themselves in the form of user profiles, personal blogs, avatars and the like. These digital representations can also be capitalized as social networks, in the number of contacts one might have in *LinkedIn*¹¹ or in *FaceBook*¹². Again, it's not about people, it's about nodes, and nodes as useful resources.

¹¹ LinkedIn [<http://www.linkedin.com/>]

¹² FaceBook [<http://www.facebook.com/>]

DESIGNING FOR MALLEABILITY

During the past decade, production tools start to become accessible to everybody. Enterprises that used to be exclusive to the wealthy and powerful, such as publishing personal opinions and reaching millions or shooting and editing movies, recently became accessible to the vast majority of Web users. One of the key strategies for the new Web is the democratization of its production tools. Now, people are given the possibility of transforming and modifying their contents as well as their contexts, resources are turned into tools for people to adapt, customize and negotiate among their communities. This allows the user to transform the digital setting to fit his personal criteria but also for collaborating with others.

*Ning*¹³ is a good example of this. It is an online platform for creating social websites and social networks. The unique feature of *Ning* is that anyone can make a full copy of the types of social websites and social networks that are popular today and customize them for a particular topic or need, catering to specific audiences. Tools are facilitators but their purpose are open, in other words, these are tools for making people designers.

Designing for structural malleability that can serve the construction of an ongoing process that can modify itself without the intervention of the designer but from the beginning allowing users modify their environments. Instead of actions that emerge from specific conditions (people acting according to their environment) we can plan for actions that can modify the environment (empowering people's agency to modify their environment).

For example, *Croquet*¹⁴, a prototype OS, empowers people with the ability to modify the system through the ongoing process of interacting with it. People are not anymore the consumers of pre-structured systems but instead they can now modify it: the concept of *consumer* is switched to *co-creator* in a convivial environment. The anticipatory approach of '*design as planning*' moves to a different strategy of production and engagement with the community of use; it recognizes its limitations and leaves the door open for further modifications. This is because the informational dimension of interaction is not just about the successful delivery of a message or accomplishment of a transaction, but also the dynamic modulation of material and social energies.

¹³ Ning [<http://www.ning.com/>]

¹⁴ The Croquet OS [<http://www.opencroquet.org/>] is a unified and networked operating system aimed for the post-browser Internet. Strictly speaking, this OS doesn't 'run' pre-compiled applications. Instead, each application launched by the user is a modification of the OS itself. This OS is focused in leveraging applications that support deep collaboration and resource sharing among large number of users.

DESIGNING FOR DIALOGUE

What I consider to be the most distinctive characteristic of digital media is the fact that it can support a dialectic relationship among its users. The traditional author-reader relationship, which is asymmetrical, can be turned into a symmetrical conversation. We can envision this medium as the continuous flow of conversations between individuals, where everyone can potentially be aware of what any other member is communicating and can reflect upon the given argument with an equivalent expression.

Another key feature of a Web that empowers social agency is allowing for the reversibility of relationship. When it comes to technology, reversibility is morality put into practice. Designing for dialogue can be understood as supporting a co-evolutionary process through a dialectic relationship. People are empowered to talk back, to comment, to build on top, but in a transparent and reversible manner. In this approach unidirectional broadcasting is discouraged as a mode of unfair argumentation because it blocks out any possible counter argument. Instead, interaction seeks for emerging issues and ideas, in a more bottom-up and atomized approach of dialogue. This interaction takes place in a small human scale, in communities and small groups where the main values are common meaning, collective thinking, and therefore collective ownership¹⁵.

¹⁵ The Creative Commons (CC) [<http://www.creativecommons.org/>] is a non-profit organization devoted to expanding the range of creative work available for others legally to build upon and share. The organization has released several copyright licenses known as Creative Commons licenses.

PART 3: **UNDERSTANDING AGENCY**

What we have so far, is that the Web has the double condition of being a space and a tool. It is a space when we consider the Web as an abstract diagram of topological connections of nodes and protocols. It creates a space by abolishing physical distance and founding the simultaneousness of *real-time* interaction. Then, it provides us with an environment for dialogue that serves as a public global record.

On the other hand, the Web behaves as a tool when it helps us achieve something that goes beyond the tool itself, when the space of conversations is understood as a type of production machine that allows us a unique kind of networked expression. If we think that this tool has the power to enrich or corrupt our lives is because we are thinking in specific uses we make of the tool but not about the tool itself. Deterministic thinking about technology (or tools) leads to the belief that the tool has the power to change our lives but forgets the opportunities that are left open for human agency. From the appropriation of the tool, new and unexpected uses and affordances can emerge.

While engaging in social conversations, we seek to find transcendence to our acts, we need to see the consequence of our action and we aspire that others can play upon them. Transcendence, in this sense points to our ability to deliver meaningful contributions to our communities and that they will be received. A tool that supports transcendental actions from their users will allow them to transform their environment instead of creating an environment that will transform them.

ACTION & EXPRESSION

So far, I've argued that the Web can be designed as a malleable space as it supports symmetrical conversation modes and it helps us have a public record and a shared memory. But what if what we get trapped inside it? What if means are turned into ends and nothing transcends beyond digital representations? Or even worse, what if what we do is melted into a uniform and anarchic chaos?

Ivan Illich [Illich, 1973] adopted the word *conviviality* to mean the autonomous and creative intercourse among persons. He describes conviviality as a state of individual and social well being where persons are once again in control of the tools that fulfill their physical, emotional and spiritual needs. Conviviality is the opposite of industrial production; the "*creative and autonomous intercourse among persons and by persons with their environment*". Convivial tools give autonomy to the user in a way that won't make him dependant of it over time, tools that allow people to administrate their own energy and that allow people to adapt them into their own needs. When he refers to tools and technology, he extends this concept from the actual artifacts to include language and complex administrative structures. Illich believed that modern technology that is developed solely for the sake of efficiency can be used out of proportion to the good that is added to a person's life, with the result that men work for machines instead of the other way around. He also believed that overefficient tools can upset the relationship between what people need to do by themselves and what they need to obtain ready-made. In this second dimension, overefficient production results in radical monopoly. By radical monopoly Illich means a kind of dominance by one product that goes far beyond what the concept of monopoly usually implies. Radical monopoly means the dominance of one type of product, this happens when one industrial production process exercises an exclusive control over the satisfaction of a pressing need, and excludes non industrial activities from competition.

In the case of the Web, we can see the supremacy of the node as the new radical monopoly. The node, in turn, can prevent us from transcending its digital setting and our actions can remain confined in a world of digital representations without ever unfolding to the physical. This is because the node suppresses the *paranodal* space of physical reality [Mejías, 2007].

DESIGNING FOR OPENNESS

We need to understand openness as something beyond the net neutrality and democratic access to the network. Openness requires thinking about the entire Web as an open system of conversations. Building on top of Maturana's statements [1997], we could say that the flow of conversations within the Web is recursively modulated and adjusted as the very structure of the medium itself. So openness, in this sense, leads to a self-regulatory organization enabled by the tools that support this openness and empower users to engage in this flow of conversations. Following this idea, Elisa Giaccardi [2003] states that designers must fully understand their role as enablers, but more precisely, as seeders within a dynamic system. As a consequence of this, design cannot be understood as planning, but instead, as the constant dialogue readjusting the flow of use:

“The definition of a new design space means an attempt to shift from a ‘know-what’ attitude to a ‘know-how’ endeavor. It hopefully represents a shift from a culture of design as ‘planning’ towards a culture of design as ‘seeding’ (or emergence), where culture, products, services, and systems are conceived as an integrated whole.”

In the dynamics of openness, the web —both as a space and as a production machine— allows a self-organizing system engendering emergent behaviors derived from the entanglement between the physical and the digital, between the organic and the inorganic, the natural and the technological. Design is here informed from the continuous flow of the system where seeding is understood as a strategy of soft control that needs to keep the delicate equilibrium of interactions¹⁶.

Openness of the Web can be read as an extremely positive and essential value because it allows the improvement of the democratic process by removing ossified and centralized structures, cutting out the middleman, and rejuvenating the architecture of participation by providing public channels for expression. Openness, in this sense, pursues for the creation of a collective and democratic memory that will potentially serve tactical and political purposes in situations where the official memory may not be sufficient [Braman, 2006]. In this way, essential cultural memories and community identity is protected from being manipulated or erased. With this at stake, commitment for collaboration in the creation of the shared record emerges naturally, although not massively. This means that

¹⁶ This soft control constitutes another flow of conversation, between design and system. Design decision is informed from the continuous feedback and therefore constituted a kind of servo-design.

the Web is always open to receive new insertions, new resources and new contributors, but it is closed in the sense that the circularity of its internal flow of conversations remains self referential; the hypertextual structure aims to connect all of its loose parts. In this sense, we must distinguish between its open structure and its closed organization¹⁷.

DESIGNING FOR AGENCY

Designing for Agency tries to identify, augment and create new channels for emerging discourses, as new social mindsets, new consensual agreements that can be transformed into action. This has deep social and political implications, because it is about enabling people to design for themselves, and to participate effectively in the democratic process.

The main difficulty here is to transcend the networked medium of verbal discussion and provide channel for practical actions, because it demands a strategic stance from the participants. As I argued earlier, design as planning doesn't work here because it fails to anticipate both the nature of the emerging conversation and much more the requirements for social action. But what it can do is enable the systemic responses that these emergent behaviors might require.

At the fundamental level, if we want to build systems that support social agency, we need to provide all the information necessary for understanding the functioning of existing institutions. Independently if it's a matter of public policy, radical transparency in the decision making process is a key value that needs to be embedded in the networked system. But transparency is not sufficient; we need to design *convivial tools*, as stated by Illich [1973]. By doing this, symmetrical dialogue will be guaranteed as people are allowed to see the consequence of their action in the networked public setting. Building upon Illich's ideas, we could say that designing convivial tools considers understanding the Web as a space opened for collaboration, providing people with the materials and tools they need to manipulate and "subvert technologies and media to their own needs and desires, to create their own messages and meanings". [Galloway, 2004] Tools for appropriation provide new ways to critically and creatively redefine our ontological and social fabric.

From this standpoint, we can understand individuals as creative transforming agents, where reflective conversations redefine their own

¹⁷ This is the autopoietic principle of a social system. The concept of autopoiesis was first introduced by Maturana and Varela [1980] in the field of Biology but latter was applied to social organizations. Luhmann [1985].

medium by opening new possibilities for reaction, pointing towards novel usage of language available in the medium and also, by creating new narrative structures. The observer [Maturana, 1978] transforms what he observes by his mere act of understanding and reflecting upon it. The kind of interaction that affords formalizing responses and reflections in the same medium, as building on top of the shoulders of others, is what I consider the dialectic principle of the Web and can certainly unfold into physicality as a positive social force.

CONCLUSIONS

Social systems are by definition open-ended, ill-structured and internally complex. They exist through the internal dynamics of their continuous flow of interactions as if they had a life of their own. Any snapshot we take from them won't grasp the complexity of their internal struggles and invisible dominating forces. It is clear that when designing a system, we can't anticipate the way people are going to use it. It has been recognized and demonstrated that the problems of ill-defined disciplines, such as Design, need to develop in a dialectic manner of trial and error in several iterations and in close connection with the community of use in order to meet the planned with the real. An ethical strategy would be to assure ongoing modifications as problems appear.

When I asked the initial question: "Can Design help transform increased connectivity into increased social agency?", I was aware that this would fall into the category of a wicked problem, as defined by Horst Rittel¹⁸. In these kind of problems, the way the problem is initially framed is determined by the pre-conceived idea we have for solving it; what possible solutions we can envision ahead of time. In this case, I developed a framework for escalating in complexity: from the material (Part 1), to the interpersonal (Part 2), and from there to the social (Part 3). Since wicked problems have no true-or-false, but rather 'better or worse' solutions, the nature of the argument tries to avoid a normative stance, but rather suggests possible pathways for the 'better' design. Also, the problem (how to empower people's social agency) is so general, that concrete design solutions addressing this question exist in many different realms, from ubiquitous computing or web services to community organization and public policy; they will all present entirely different and unique solutions. I'm also aware of the falsity of trying to define a *class* of wicked problem, that's why I must emphasize that I'm not portraying a solution, but presenting a general framework for design itinerary.

¹⁸ In 1973, Horst Rittel and Melvin Webber, both urban planners at the University of Berkeley, wrote an article for *Policy Sciences* with the title "Dilemmas in a General Theory of Planning". In this article, the authors observed that there is a whole realm of social planning problems that cannot be successfully treated with traditional linear, analytical approaches. They called these *wicked problems*, in contrast to *tame problems*.

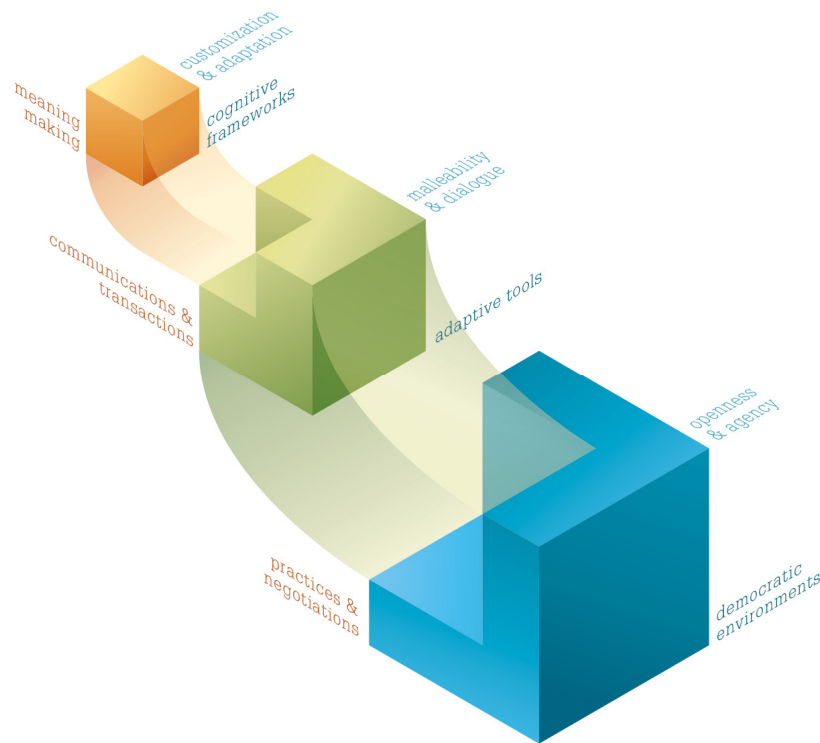


Fig. 6: This framework considers three different layers of complexity, each one of them somehow nested inside the other. Each layer portrays a different “design realm”.

Interaction Design is concerned about the existing relational settings between individuals and social networks as it strives to design new relational spaces for them to exist in new possible ways. This discipline is based on the assumption that people interact *with* and somehow inhabit the computational space that is opened up by the interface and constitutes a sort of objective reality. Such space is not simply determined by technology, but it is a dynamic relational system, in which human beings experience and negotiate in relation to technology itself. Actually, while analyzing the different causes for social disengagement, technology, as pointed by many authors, appeared as one of the main responsible causes. Considering approaches embracing even more sophisticated and advanced technologies appeared to be solving a crisis by escalating even more in the causes. Of course, nothing is so simple and technology hasn't a pre-assigned value although, beyond remains as a tool, it also embodies specific mindsets and ideological approaches around the specificity of the tool itself.

From a different perspective, (maybe a more 'techno enthusiastic') technology can be seen as an agent that triggers structural social change, as a powerful intervening agent that works as an accelerating catalyst of

the relationship between human agency and organizational structures, and therefore can alter the existing roles and patterns of such interactions. Design is what shapes technology and transforms it beyond the utilitarian dimensions of the tool itself and its reflected in the crossing of our intent as human beings and what the tool allows and negates within its range of action.

If Interaction Design is fundamentally concerned with the mediation process, an opportunity for enabling greater participation is to overcome the idea of design as a problem-centered discipline, and take it more like a creative mode of existence not framed by pre-existing problems. In the same sense, our subject matter is not exclusively addressing human needs in general but pursuing an answer for our creative endeavor. We need to be aware of our human condition as poetic because we live in the constant recreation of the world.

FURTHER QUESTIONS

The way in which ICTs are currently evolving indicates a strong tendency towards augmenting people's agency in building their informational medium, in decision and even policy making. I can see in the near future that they'll be extending these affordances to more politically significant areas such as government itself.

Following this idea, in November 2005, UK Prime Minister Tony Blair commissioned the publication of the "Transformational Government: Enabled by Technology". This document described the strategy for delivering public services in the next years, taking more advantage of ICTs and citizen participation. Its core transformative ideas were:

- *Services enabled by IT must be designed around the citizen or business, not the provider¹⁹, and provided through modern, co-ordinated delivery channels.*
- *Government must move to a shared services culture – in the front-office, in the backoffice, in information and in infrastructure – and release efficiencies by standardization, simplification and sharing.*
- *There must be broadening and deepening of government's professionalism in terms of the planning, delivery, management, skills and governance of IT enabled change.*

Besides the obvious benefits of bringing modern and more efficient mechanisms to the existing bureaucracy, by incorporating more standardization, simplification and sharing, general administration costs will be reduced and will increase government professionalism at the moment of planning. This new political architecture will initiate a movement from plebiscitary citizen participation to a deliberative mode of direct agency. Sooner or later, the existing model of indirect representative democracy will be questioned due to the raising control people are gaining over the flow and content of information. What will be the role of design in such scenarios?

¹⁹ Defining a user-centered service delivery for the government.

FRAMEWORK TABLE

	PART 1	PART 2	PART 3
Approach	Material	Dynamic	Open-ended
Subject at stake	Form and interfacing	Conversation and mediation	Human values: truth, trust, justice and freedom
Problem addressed	How ICTs have brought the irrelevancy of the near	How ICTs have overprivileged content over human connections	How individual action doesn't seem to be relevant. People feel powerless
Design approach	Top-down planning	Bottom-up construction and negotiation	Social participation
Setting	The infocloud	The social network	The public forum
Tools	Visualization tools	self-publishing tools	Structured organizations for public opinion and political activism
Difficulties	Lack of engagement	Lack of commitment	Lack of awareness
Conversation dynamics	Shaping materials	Meaning-making symbols	Living and sharing experiences
Role of the designer	from behind: designer as planner	with: designer as facilitator	in between: designer as seeder
Design strategy	The integration of people and place	Democratization of authoring tools	Participation, designing for democracy (E-democracy?)

Table 2: Expanded framework: articulating inquiry.

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