The JOURNAL OF SOCIOCYBERNETICS (ISSN 1607-8667) is an electronic journal published biannually--Spring/Summer and Fall/Winter--by the Research Committee on Sociocybernetics of the International Sociological Association.

MANUSCRIPT submissions should be sent electronically (in MSWord or Rich Text File format) to each of the editors: Karl-Heinz Simon (simon@usf.uni-kassel.de), Barry Gibson (B.J.Gibson@sheffield.ac.uk) and Juan Aguado (jmaguado@um.es). In general, please follow the Chicago Manual of Style; citations and bibliography should follow the current journal style (APA). Normally, articles should be original texts of no more than 6000 words, although longer articles will be considered in exceptional circumstances. The Journal looks for submissions that are innovative and apply principles of General Systems Theory and Cybernetics to the social sciences, broadly conceived.

COPYRIGHT remains the property of authors. Permission to reprint must be obtained from the authors and the contents of JoS cannot be copied for commercial purposes. JoS does,
SOCIOCYBERNETICS traces its intellectual roots to the rise of a panoply of new approaches to scientific inquiry beginning in the 1940’s. These included General System Theory, cybernetics and information theory, game theory and automata, net, set, graph and compartment theories, and decision and queuing theory conceived as strategies in one way or another appropriate to the study of organized complexity. Although today the Research Committee casts a wide net in terms of appropriate subject matters, pertinent theoretical frameworks and applicable methodologies, the range of approaches deployed by scholars associated with RC51 reflect the maturation of these developments. Here we find, again, GST and first- and second-order cybernetics; in addition, there is widespread sensitivity to the issues raised by "complexity studies," especially in work conceptualizing systems as self-organizing, autocatalytic or autopoietic. "System theory", in the form given it by Niklas Luhmann, and world-systems analysis are also prominently represented within the ranks of RC51.

The institutionalization of sociocybernetic approaches in what was to become RC51, the Research Committee on Sociocybernetics of the International Sociological Association, began in 1980 with the founding of an ISA Ad Hoc Group and proceeded with the organization of sessions at succeeding quadrennial World Congresses of Sociology. The eventual RC51 became a Thematic Group and then a Working Group. Finally, in recognition of its extraordinary success (growing from some 30 members in early 1995 to 240 in 1998), the group was promoted to the status of Research Committee at the 1998 World Congress of Sociology in Montreal.

Over these past two decades, sociocybernetics has attracted a broad range of scholars whose departmental affiliations represent the entire spectrum of the disciplines, from the humanities and the social sciences through the sciences, mathematics and engineering. Furthermore, the many countries of origin of these RC51 members attest to the wide international appeal of sociocybernetic approaches. Within this highly diverse community, there is wide agreement on some very general issues, for instance, on developing strategies for the study of human reality that avoid reification, are cognizant of the pitfalls of reductionism and dualism, and generally eschew linear or homeostatic models. Not surprisingly, however, there are also wide divergences in subject matter, theoretical frameworks and methodological practices.

Many have argued that models developed for the study of complexity can be usefully appropriated for the study of human reality. Moreover, however, the emphasis in complexity studies on contingency, context-dependency, multiple, overlapping temporal and spatial frameworks, and deterministic but unpredictable systems displaying an arrow-of-time suggest that the dividing line between the sciences and the historical social sciences is fuzzier than many might like to think. What is more, in the humanities, the uniquely modern concepts of original object and autonomous human creator have come under serious attack. The coincidence of these two phenomena substantiate the impression that across the disciplines there may be observed a new concern for spatial-temporal wholes constituted at once of relational structures and the phenomenological time of their reproduction and change.

In this context of rich history and exciting possibilities, the Research Committee on Sociocybernetics of the International Sociological Association extends an open invitation through the Journal of Sociocybernetics to all engaged in the common quest to explain and understand social reality holistically and self-reflexively without forsaking a concern for human values--human values not construed simply as a matter of individual ethics, but conceived as an integral part of a social science for our time.
Toward a bridge between sociocybernetics and internet studies ........................................ 1
Electronic Communication and Spectral Meaning ............................................................. 4
The Global Conversation and the Socio-Biology of Awareness and Consciousness .......... 21
Space and Time Scales of Human Perspective and Sustainability: Tools for Modeling Daily Life dynamics ......................................................................................................... 34
Electronic Money: Its Economic, Social, Political, and Environmental Impact .............. 47
“Community” – Where to from Here? From “networked individualism” towards “community networks” .................................................................................................................. 62
Cibercultur@ as an Interdisciplinary activity in Research and Local Communities. Advances in an Information / Communication / Knowledge computer system development. 73
E-Social Science from a Systems Perspective: Applying the SACS Toolkit ....................... 89
Daily Life of Non Profit Organisations Inhabiting the Web ............................................. 107
Consumer 2.0, participation or exploitation? ..................................................................... 121
The *Participatory Culture by HENRY JENKINS: An Empirical Reflection on Social Network Sites ...................................................................................................................... 131
Shaping the Pop: US TV Series and Italian Networked Publics ...................................... 144
NOTES FROM THE EDITORS

The current issue of the Journal of Sociocybernetics is bringing selected contributions to the 2009 International Conference on Sociocybernetics in Urbino/Italy to a broader audience. Many thanks to the guest editors and to those who submitted their papers for publication and responded to the recommendations of the reviewers. The character of an oral presentation is maintained in some cases.
Introduction

Toward a bridge between sociocybernetics and internet studies

Fabio Giglietto, Luca Rossi

In July 2009 the Department of Communication Studies of the University of Urbino “Carlo Bo” hosted the 9th International conference of Sociocybernetics: the annual meeting organized by the Research Committee 51 of the International Sociological Association (ISA). The topic chosen for this symposium was the impact of social media on contemporary society. The term social media refers to a broad and heterogeneous set of Internet services sharing in common the centrality of content generated by users (UGC) instead by the owner of the service itself. This category contains a wide range of services such as blog-publishing platforms, social network sites like Facebook or MySpace and a number of services based of content sharing such as YouTube or Flickr. The astonishing global success, that these services are experiencing, pushed many scholars to investigate the impact of social media on online practices and on society. The largest part of Internet studies is nowadays focused – with a large range of different methods and approaches – on this phenomenon.

At the same time media, and therefore also social media, have been a topic little or nothing explored by the scholars who follow the tradition of Norbert Wiener, Ludwig von Bertalanffy and Heinz von Foerster. In this field even the most sociological oriented research approaches, such as those developed by Talcott Parsons, Niklas Luhmann and their scholars, hardly have studied the media in general or the Internet (with the remarkable exception of Dirk Baecker) and very little research has been done on social media. Nevertheless - and this is the hypothesis on which the conference held in Urbino was conceived - the theoretical tools made available from sociocybernetic traditions may be fruitfully used in Internet studies.

The first reason for that is interdisciplinarity.

Sociocybernetics offers a set of conceptual tools (from the ecological approaches proposed by the general systems theory to feedback) developed with the precise intent of supporting the collaboration among scientists coming from different backgrounds. Interdisciplinarity is therefore part of the DNA of cybernetics since the very first edition of the Macy conferences back in 1946. Even at that time it was already clear that in order to face the challenges proposed by the study of complex human and teleological machines, a single scientific approach was not enough. Today Internet studies, as it has been pointed out by the inventor of World Wide Web, Sir Tim Berners Lee, need a truly interdisciplinary approach to advance. Tools from computer science, mathematics, physics and statistics are suddenly used (and need to be used) by psychologists or sociologist exploring how communication and social systems reproduce and evolve online.

At the same time computer scientists – who are working on the next generation of online services – often need the help from psychologists or sociologist in order to understand and describe online social phenomena.
This on-going convergence between different disciplines opens today an extraordinary amount of unexplored research potential: a brand new land of opportunities that sociocybernetics has the potential to exploit.

Obviously the digital scenario of Internet research offers an amount of social data that was unthinkable even few years ago. Blogs’ entries, pictures, status updates, online videos, geotags etc. offer an unprecedented load of social data available for researchers. The quantity of those data easily outnumbers every qualitative or quantitative traditional approach developed so far by social sciences and the ability to cope with it still constitutes often a computational challenge. Nevertheless it is no just a matter of quantity.

When social sciences want to research the digital reality of social media they have to face with the distinction between visibility and observability recently introduced by Danah Boyd.

Visibility is our perspective on the world made possible through social media. It is the selected reality made by the sum of our subscriptions or connection: Facebook Live Feed, the friends we follow on Twitter, the blogs we read, the YouTube channels we use to watch etc. etc. The opportunity to have such a personalized point of view on society is something new and it may bring the risk of confusing our personal and always socially mediated perspective on the world with the world itself.

We therefore face two different problems: first, it might easily forget that online content – especially user generated content – should always be observed as a communicative performance addressed to an audience (and we are not necessarily included in it). What is visible through social media is a complex mechanism of identity representation. We are always watching the outcome of specific communicative actions made by a growing number of content producers increasingly aware of the presence and characteristics of networked publics.

Second: there is a risk of taking a small and localized social phenomenon as a general and global one. Our online experience is mostly made by users and contents that are similar to us (this is also a consequence of the theory of homophily applied to online social networks).

We usually generalize what we see assuming that what is outside of our personal networks (and it belongs to the larger part of the Internet that we do not know) has to be similar to what we know. This is a dangerous behaviour especially if you want to study the Internet with a scientific perspective. In order to observe this kind of phenomena a shift from visibility to observability is needed.

Observability, framed within a second order cybernetics perspective, is an operation, carried on by and observer and constituted by the operations of distinction and indication. The analysis of user generated content for sociological research, as any other kind of sociological insight, is based on observing communication. As every operation of observation also the process carried on by social scientists has to take always in account the fact that there is a blind spot in every description, something that cannot be observed.

The visible part of a phenomenon should always be related to the hidden part of it, to the part we cannot see. Online research makes clear one of the basic principles of second order cybernetic that constitutes a large theoretical background that should not be forgotten.

Beside the more theoretical implications that internet research shows, there is undoubtedly the general feeling that only through a proper theoretical approach and a large use of proper research tools the growing complexity of social systems and the pace of their changing could be faced.

---

Within this perspective some of the most up to date research approaches – also in the social sciences – seems to be based on computer software and tools developed with the aim of collect and deal with the huge amount of user generated contents that is now available. With a proper theoretical framework, one able to deal with the observability issue, this seems not to be an option but a necessary step. Huge, unthinkable amount of social data are out there and social researchers will find a way to use them.

Nevertheless this is a risky step.

Computer software – no matter how complex it is – will never be able to replace good research questions of effective interpretative skills. Big data are not enough.

Theory and research hypothesis are now more relevant than ever.

What is needed is a comparative approach able to identify recurrent patterns in network of communication. Comparison between different audiences within the same social media platform or between different platforms could link what has been described to a larger framework of sociological interpretation. This is the only way to move beyond a merely data-base based analysis and description of online phenomena and reach a brand new phase of online sociological research.

This is a time full of opportunities and risks both from the point of view of researchers and of society. Moving out of the wall of our disciplines into the unexplored field on interdisciplinarity is the only way we have to manage that.

The conference in Urbino was just a first step of a path that could bring sociocybernetics and Internet studies closer and, maybe one day, on this common unexplored field.

In this special issue of this Journal we have collected some of the papers presented during the 9th conference of Sociocybernetics.
Electronic Communication and Spectral Meaning

Marco Toledo de Assis Bastos

Center for Philosophical Studies of Communication (FiloCom - USP) and the Research Network for Media Anthropology (FAME - JWG Frankfurt Universität).

opus@usp.br

1. ON THE SPECTRAL

Time’s Person of the Year for 2006 was not an individual. With a cover depicting a computer and the pronoun “You”, the magazine made the buzzword “Web 2.0” hit the headlines. According to Time Magazine, 2006 will be remembered as a year of community and collaboration on a scale never seen before. Social networks, Wikipedia and YouTube were depicted as essential tools for this new Internet called Web 2.0, where people help one another for nothing and entirely new content is created by anonymous authors. The magazine claims this is not just a new version of the same old software, but a revolution of Tim Berners-Lee’s World Wide Web.

The so-called new Web would bring together small contributions from millions of people and make them matter. Intensifying productivity and innovation, this massive social experiment would also be capable of building a new kind of international understanding. It did not seem relevant that social networks have been around since the beginning of the Web, or that Amazon reviews are nothing new. Neither did it matter that the open source community, which established the standards of collaboration all over the Web, could hardly be described as fresh and hype. But even if the magazine ignores that this is what Internet or even Usenet has always been, the Web 2.0 reinforces the assumption that Web not only changes the world. It also changes the way the world changes.

The idea that what changes is not only the world, but the very process of changing, points to a question pertaining to the nature of electronic technology. Computers and internet reorganize the processes of communication and affect not only contents and styles, but also the meaning of acts of communication (Baecker, 2005). Web 2.0 is not just a buzzword. It is a moment of mesmerizing surprise when the public opinion acknowledges a modification both in the components and in the arrangement of the mediascape. It is as if there would be one kind of logic over this process or, as Luhmann observes, a cultural form that copes with the surplus of meaning this media brought. This cultural breakdown will be henceforth addressed as spectral.

Spectralization is both something relating to a spectrum, as in “the spectrum of colors,” and something characteristic of a phantom, as in “spectral emanations.” The use of the word

2 A version of this article was presented at the ISA RC51 conference “Modernity 2.0: Emerging Social Media Technologies and their Impacts”, held at the University of Urbino, Italy on 30 June 2009.
to address meaning in the electronic media matrix refers to this twofold suggestion, and intends to describe both an environment and a dynamic of meaning clustering. When Marx wrote in The Communist Manifesto that “A spectre is haunting Europe – the spectre of Communism,” the phrase was supposed to portray an imminent danger to Europe that could not quite be localized nor otherwise eliminated. The “spectre” was not about an imminent attack, nor a hideous threat, as there is no predictable menace in the phrase. The word brings out a feeling of haunting, that is, a force as possibility and environment. Derrida (1993) has also explored the term as a core operation of deconstruction, connecting the spectral to the *différance* as something without presence or absence, and whereof significations are created in reference to spectral vestiges.

But it was Kittler (1993) who brought this epistemological approach of the spectral together with an investigation of technology. The German philosopher mentions the fear Balzac felt regarding photography, as he claimed the daguerreotype would slowly peel off the human body. If human body is made of thin layers of specters, ponders the writer, then the daguerreotype is a trick that steals one layer after the other until nothing remains of the specter but a photographed image. In contrast to the arts, says Kittler, media reconstruct bodies not only as a symbolic system, but rather as a reality in which the resemblance is guaranteed because the product turns itself into the object. Paul Virilio (1984, p. 224), in a similar way, maintained that communication and telematics complete the circle of “deanimalization” initiated with the telegraph and the train. Not only would animals give way to machines, but technical communication itself would have the tendency to disappear in face of the transmitted communication signals of radio and radar that brought about electronics. For Kittler (1993), media began providing specters dating back to 1837, when the Morse alphabet was invented to tap specters from death, and continued doing so with the invention of photographic plates, thus reproducing more and more specters. Kittler also recalls one of the envisioned purposes of Edison’s newly invented phonograph in 1878: to record the last words of dying people.

McLuhan (1995, p. 96) claimed that every technical device, in so far as it provided a new and more effective mean of transportation, has marked or will mark an epoch in society. Important changes in the means of transportation would go together with major changes in communication. Spectralization is thereby an ongoing patter within society and it is noticeable both in media organization and in transportation networks. Spectralization makes the guy in the next seat on the bus nearly invisible, as it turns that particular person in a specter that will only be seen again by accident and for a short term. This kinetic disappearance of the surrounding people is not exactly a social phenomenon that divorces the physical presence of the other from its image, as argued by Guillaume (1989), for whom the spectrum is a growing dematerialization of society that increases isolation and exclusion of the other. It is however a dynamic of clustering and organizing unknown recipients as if they were data. Spectralization is at the core of the electronic and material worlds to such an extent that we commute spectrums both online and offline.

Spectralization is therefore a metaphor for the particular meaning dynamics of cyberspace. It is an attempt to correlate the nonspatial metaphors of diffusion that have shaped the cyberspace imago with a straightforward metaphor that focuses its interior. In regards to the nonspatial metaphors of diffusion, cyberspace has been widely depicted as a rhizome (Hamman, 1996), atmosphere (Markley, 1996), realm of fantasy (Hamman, 1995), unthinkable complexity, ray of light, data constellations, clouds or consensual hallucination (Gibson, 1995). All these notions have a connection to ideas such as acceleration, expansion and interactivity, thus depicting a world of continuous movement towards permanent change. The internet imago is an image of mutant dynamics that prevents immobilism and static representations.
However, we lack good metaphors to describe the interior of cyperspace mechanisms. Because this medium is itself a system that processes complexity, critics and analysts have refrained from offering a counterpoint to the expansive images of a rhizomatic cyberspace. The idea of spectral meaning is for this reason interesting, as it both associates the metaphors of diffusion, as a general cloud of data, and the interior mechanisms of this data processing. We will address these interior mechanisms with more focused metaphors, such as onion rings and the growing, inner and outer dynamics that together give form to spectral clustering. If the spectral is the inner circuit of meaning that connects one bit to the other, than the onion rings are the actual structure of this nonspatial dimension. Spectral data processing oscillates between these two metaphors.

2. MEANING

The concept of meaning at this point intended takes on a broader definition than the linguistic aspect of the sign. Frege’s comments on meaning and reference point to three realms, in which logos would be the realm of meaning. This somewhat platonic approach can be intermingled with the logic of sense presented by Deleuze (1967), whose idea of meaning is both wider than the sign and yet still propositional (that is, pertaining to the nature of a proposition). Meaning for Deleuze is an incorporeal transformation. It is an unpredictable event that changes the configuration of the bodies. There is no intentionality between two consciousnesses, and if it happens that an incorporeal transformation takes place, a random event reorganizes the language combining expression and content in different modalities.

Hence there is nothing ontological regarding meaning. It is an episode in which internationalities meet up, or a friction between bodies in a common environment. It is a new condition that relates both to users and context without any union, but a sharing of the horizon of possibilities. The event of meaning as presented by Deleuze resembles the event (Ereignis) as presented by Heidegger: a simultaneous presence of entities not disclosing what they are in an open space — where beings show up. For Deleuze (1967), there is no use in asking what the meaning of an event (évènement) is, given that the event is meaning (sens) in itself.

Because meaning for Deleuze is propositional, he makes reference to a regime of signs henceforth described as an amorphous atmospheric continuum. The regime of signs pictures a system in which all signs are signs of other signs, and the signifier would be the sign in redundancy with the sign. This amorphous continuum focuses not on what a given sign signifies, but to which other signs it refers to. As a serial sequence of connections, it comprises an adjunction of signs, yielding a network without beginning or end which Deleuze & Guattari (1987, p. 112) identify as the amorphous atmospheric continuum. Finnemann (2001), on the other hand, worked on the idea of a continuum of media to deliver the concept of a media matrix, terminology that makes it possible to consider the electronic continuum as constellation — in no way amorphous — of any number of media in a given epoch.

Deleuze (1967) claimed that meaning works both on language creation and on the communication event. That is, there is meaning production when signification expresses something, as well as when information refers to a plane of immanence (plan d’immanence) that attracts one’s intentionality to what is expressed. Deleuzian philosophy understands meaning as an inference of the incorporeal into the corporeal, an inference that also takes place when making sense of information. There would be a difference of degree between one and the other, but not a difference of nature. Information involves both personal and social levels and the passage from one to the other is the event in communication. Meaning runs through the components of language the same way it goes through channels of communication.
This foreground on the concept of meaning, which Deleuze took from the concept of expression in Husserl, comprehends these two series of transformations and is decisive in understanding how information is clustered in electronic environments. This is because the difference between the incorporeal and the sign is analogous to the tension between information and communication. When information comprises my stream of consciousness, it sends me towards a series of circles. This intersection of planes is what meaning accomplishes and it relates both to the production of sense and to the process of communication.

Husserl also influenced the understanding of meaning in authors such as Niklas Luhmann (Paul, 2001). But an entirely different concept of meaning is presented by Luhmann, who claims meaning should be one of the basic concepts of sociology, as social processes are meaning processing itself. Different from Habermas or Schütz’s conceptualizations, Luhmann’s concept of meaning is not limited to subjective perception or the cognition of actors. It only happens in relation to a dynamic that is produced and reproduced socially. As a horizon of possibilities, meaning is the constant actualization of potentialities and everything has meaning only within a horizon of possibilities indicated.

Another point of departure is Luhmann’s controversial assertion (1990, p. 31) that human beings do not communicate; only communication communicates. The statement was an attempt to avoid the background of action theories and subject-centered perspectives with respect to the process of communication, thus allowing an explanation based upon the units of communication with reference only to the social system that produces it. Luhmann’s theory maintains that there can be no communication without human beings even though they do not take part in the process. Communication was then an operation not based upon agreement, consensus or persuasion, and meaning would represent the principle of selection that divides information into what does or doesn’t have meaning.

Selection, on the other hand, was internal to the system and operated according to a virtual horizon of meaning, which was not the same for all systems. That is, an observation was made only with reference to one horizon of meaning which other systems would not recognize. This hypothesis of multiple axes of meaning also came from Talcott Parsons and constitutes the principle of functional differentiation, where meaning processing is expressed through a variety of enfolding axes that do not overlap. Different codes are processed according to numerous horizons of meanings and one does not exclude the other.

Luhmann’s conception of meaning offers a perspective detached from hermeneutics and the subject-centered perspectives. According to hermeneutic tradition, meaning was rooted in the subject and not in the object, which only gains properties by the attribution of a Cartesian agent. This agent is res cogitans and not res extensa, that is to say, it was the spirit that conducted operations of meaning attribution. This hermeneutic topology has enforced the correspondence between expression and interpretation thus resulting in a concept of meaning that is utterly subject-centered and significance-oriented. None of these inferences exist in the theory of Niklas Luhmann (1997). Meaning is once and for all an operation of systems.

3. COMPUTER WORLD

The theory of Niklas Luhmann also offers support for reevaluating the role of computers in contemporary society. Such ideas are based upon a historic view that Luhmann (1997) presents regarding the media and self-organization of society. In this view, Luhmann claims society needs a cultural form to survive every new distributive pattern of communication. That is, a form that would enable society to deal with the surplus of meaning brought by new technologies. Thus, if Aristotle’s principle of telos managed to deal with the surplus of meaning in writing, and Descartes’ principle of a self-referential consciousness has given society a way to
deal with the surplus of meaning in printed communication, there would have to be a way to tackle the surplus of meaning regarding computers and the internet.

The catastrophe that computers created would be especially interesting since it adds reflexivity to communication autopoiesis, hence establishing for the first time a competition with consciousness. Computers and the internet would not only carry out distribution, transmission and understanding of information. They would also change information and understanding, which from now on would be grasped by electronic routines of processing and filtering.

Luhmann (1997) also presents this historic approach by drawing a distinction among three major cultural forms in history. The first is the literary society of antiquity, the second is the printing-press society of modern Europe, and the last one would be the computer society of the current globalized world. Luhmann refers to these media as cultural forms because they deal with the surplus of meaning in specific ways. In an approach that resembles the Catastrophe Theory of Rene Thom (1983), Luhmann claims society passed over the first catastrophe (the writing), creating a Hochkulturen that organizes society in layers. The second catastrophe, the press, introduced the possibility of comparing and analyzing manuscripts since then standardized and mass-distributed across social layers, hence jeopardizing previous forms of classical authority.

According to Baecker (2004), the third catastrophe is the integration of computers into communication processes, which reorganizes communication styles and contents, thus changing the meaning and deconstructing the ways we previously viewed understanding. Every age would have found a way to deal with the problem of meaning, and the introduction of computers is about to bring its way. Some messages are going to be taken seriously and others are not. There are criteria regarding what to pay attention to and what messages to accept. Even though the introduction of computers put an end to the former meaning-processing paradigm, it is not yet clear how technological society is organizing form and content.

Another interesting facet of Luhmann’s theory can describe the Net as a medium, adding yet more layers to the picture. Even if the Web is far too structured in comparison to loosely-coupled traditional media, such as sound waves or paper, this hypothesis allows a more direct approach to the problem of meaning generation within the internet. For Luhmann, a medium is always given in relation to a form. There is no form without a medium and media only exist because of forms. The famous example is the footprint left in the sand when walking on the beach.

The sand represents loosely coupled elements which are grouped together by something more solid — that is, the foot. The sand is thus a medium of the form imprinted on it, and the footprint is a form that only exists because of the sand. The dynamic between medium and form is the same one described in Luhmann’s concept of meaning. The medium is what is possible and the form is the actual structure. The contradiction between these two approaches — meaning as an autopoietic system or as a medium — is nonetheless only apparent. Luhmann (1994, p. 378) explains it is possible for a system to be both a structurally determined system and a medium at the same time, seeing that this is the case with the mind and the evolutionary acquisition of language.

Luhmann’s scheme can also be applied to the meaning dynamics in cyberspace, which would reproduce itself as an autonomous system. This is because meaning for Luhmann is what connects one selection to the other, the same way one message is linked to another in electronic interactions. The connection between one input of information introduced by a medium, and the reverberation guaranteed by another medium, is what Luhmann calls meaning. According to him, one communication binds to the other as long as there is a context of mean-
ing, or to say it another way, it is meaning that ties one communication to the other. Information transmitted over the electronic media matrix only generates meaning inasmuch as one cluster passes it through to the other, thus allowing information to travel among the electronic circles of data. Meaning is thus a compound generated and engendered by a chain of multiple and steady interactions. It is somehow like a dialogue in which one phrase relies on the previous phrase in order to give continuity to the conversation.

This general regulation of selections implies that meaning is not given in the act of understanding, but it rather goes through different forms that return to further agents at unpredictable circumstances. The process of communication is no longer defined as a direct action based on bilateral and at-hand participants, but in a spectrum of interactions hardly noticeable, a cloudy atmosphere of wide-ranging electronic performances. The process of communication, for Luhmann, depicts a sequence of links between one theme and another that builds a memory without any action of agents or subjects. This molecular sequence of communications is possible because technology gives a form to the unshaped medium of people.

As an amorphous and outspread compound of individuals, people can hence be grouped in any number of configurations or arrangements, such as public opinion, consumer groups or the blogosphere. They are grouped according to context and might as well cease to exist the next moment. These cardiac movements of systole and diastole, contraction and expansion, or union and dissipation, are the heartbeat of the electronic media matrix, that is, the internet depicted as a field of oscillating relationships.

For example, if a TV network broadcasts an extraordinary event, it is expected that newspapers will also report on it and add information. They work with an implicit arrangement that makes the system grow bigger by the time other sources join the reporting, consequently enlarging the continuum electronic environment of information. This progression of adding one medium to the other in order to broadly spread the information is one of the main aspects of the electronic media matrix and all media take part in it. It is a matrix because it impacts consciousnesses and then turns back to media in looping effect. Even though Luhmann would not acknowledge the existence of such relationships, he nonetheless mentioned something external to agents and observations. In a given classroom there is a teacher and his or her students. Beyond that, there is the interaction between teacher and students and this very interaction observes both parties (Luhmann, 1995). The interaction senses the imminent system to come and promptly starts projecting possible meanings.

4. SPECTRAL MEANING

According to Izuzquiza (1990, p. 61), Luhmann’s idea of complexity refers to the difference created by the multidimensional units of numerous and different perspectives. Complexity thus implies in a surplus of relations and connections, which can be analyzed only due to the essential role of relations. Therefore, connection and selection are required conditions for operations within complex environments, and also the only way complexity can be approached. This mechanics between a variety of inputs and outputs can be extended to encompass a draft of a theory of communication, which will no longer be based upon senders and receivers, but rather upon Alter and Ego, therefore comprehending the conception of a double contingency.

The background of complexity as pictured by Luhmann could also explain the circulation of messages in cyberspace. For Luhmann, Ego is always a communicating Ego (Adressante Ego). Alter, on the other hand, is always a communication-receiving Alter (Mitteilenden Alter), which creates a situation of double contingency at the two extremes of a communication event. Ego and Alter are not real people, and the terms are supposed to avoid any anthropo-
morphic suggestion. These are systems in a given context that share no contact with one another, for Alter and Ego process information independently and autonomously, a distinction Luhmann made to set information apart from message. Consequently, Alter and Ego do not perform transmissions by turns and they are created only through the process of communication, which also works as their frame of reference.

This scheme creates a circular and auto-referential dynamic of information, inasmuch as Alter and Ego understand each other as communication and rely on the process as a nexus that creates both communication and communicational “agents” all together. Acceptance and understanding of messages are no longer the purpose of communication, for communication itself does not depend upon the acceptance of messages or the content communicated. Luhmann describes the process of communication as steady sequences of connections, in such a way that one act of communication binds to the next, creating a dynamic where communication stages are exterior to the very process of communication. From the point of view of understanding, acceptance or refusal of messages corresponds to the difference between information and message towards the reduction of complexity.

Luhmann’s concept of double contingence means that each participant relies on the other and organizes its behavior according to the awareness of being object and agent of an action. This idea of a double contingence linking actions, together with Talcott Parsons’ concept of a shared symbolic system, depicts an environment of symbolic interchange ruled by actions that link one communication to the other (Izuzquiza, 1990, pp. 244-245). Luhmann also argued that meaning and the continuum reproduction of the system were one and the same thing. The autoreferential reproduction of the system evaluates the possibilities to operate connections, therefore allowing meaning reproduction. This movement of the system is what Luhmann calls meaning, whether it is processed as communication (social systems) or consciousness (psychic systems).

If meaning as a process that lacks content, or as a constant need for selection and connection, fits this idea of a spectral meaning, it does not, however, describe how messages evolve in electronic environments. However, Deleuze (1967) offers an idea of meaning that relates to propositions and stands for message processing as meaning generation. Meaning would be not a single entity, but rather an effect of the relationship between a proposition and the world. In contrast to the autopoietic view presented by Luhmann, Deleuze presents a rhizome-based concept in which the minimal unit is not a word or an idea of sign, but a coupling; that is, the instant in which an expression makes sense, thus conveying meaning. To put it another way, expressions are the outcome of couplings and coupling of words expresses meaning. While meaning according to Luhmann’s theory depicts a sequential network, in Deleuze the image of meaning would be a surface of upcoming events.

The concept of meaning depicted as a development in between Deleuzian and Luhmannian theory offers a hypothesis that is not based upon a spatial and geographical identification of clusters and messages. The word “spectral” is therefore important to stress the absolute lack of spatial reference. Also, it leaves out the principle of efficiency upon which previous communication models were based. The circulation of information has no real geography but a spectrum of inferences from one peer to the other. This spectralization of the electronic ambiance matches the concept of an incorporeal meaning as presented by Deleuze, while Luhmann’s model clarifies the dynamics of selectivity in the continuous atmosphere that operates as an autonomous and autopoietic system. But even if these theories summarize an understanding of meaning operations, it is still necessary to relate this processing to the actual circulation of information on the internet. That is, to the growing layers within the onion.
The steady and varied collaboration, as well as the combination of different consciousness in a compound such as the public opinion or the blogosphere, give birth to forms, as Luhmann would put it. This operation that shapes a medium into a form will be addressed later as an internal operation of the spectral, that is, the clustering of data in electronic environments. These inner operations of the spectral, however, will only become clear after outlining its organization. In this regard, a fairly approximate picture of this spectral circulation would be — as odd as it may sound — the image of an onion.

Cyberspace does not irradiate, but rather spectralizes. It is an omnipresent electronic spectrum enwrapping a multitude of media like an onion is enclosed in successive rings or layers. The image of an onion is useful because it depicts single layers attached to bigger and smaller layers, thus conforming this spectrum of media portrayed as a continuous integrated media reality. The onion is a conglomerate of rings the way cyberspace is a gathering of media. There is no real structure except interconnected growing rings. The onion ring suggests a compound of inner and outer circles in permanent crossover, an interweaving only made possible by the principle of data clustering that grants mobility to the layers as they grow and recede. The inner organization of an onion, together with the codependence of one layer upon the other, is analogous to the circulation of communications performed by diffused clusters (performers) in cyberspace. As an evolutionary outgrowth of technological society, electronic meaning cannibalizes former processing models, from face-to-face interaction to broadcasting media, into an atmospheric media compound.

This electronic atmosphere is arranged as a nonhierarchical rhizome, therefore enabling that every element might get the chance to play wide-ranging roles in the system. In fact, most elements struggle to access broader circles of influence. The atmosphere does not have a fixed structure though media and users acknowledge this world as an integrated worldwide system. The metaphor of an onion should then be highlighted as if the rings could move along the sphere, that is, the innermost layer must be able to turn itself in an external layer. Different performances run through this continuous electronic atmosphere and no agency actually controls the sphere.

The idea of onion rings is also interesting for it comprehends the diverse roles a medium play in the system. Because it is a system reproducing itself, a tabloid or a blog may well attempt to put their transmission into the atmosphere. Content is irradiated inside the matrix, and it may or may not gain support and thus a larger audience. Every medium wants to spread its information vector as far as possible. A newspaper, for example, can repeat some news received from other media if it meets the targets and the company values. Any given medium cannibalizes information from other media, but it is not up to them to decide which information is going to be on top of the system.

Likewise, no medium controls such meaning operations, as they are merely subsystems of the electronic media matrix. A blog may echo a report from a newspaper, but that does not mean the blogosphere will automatically follow them. The life of a message within the media matrix depends on subsequent feedback from other media. If none of them reverberate a received vector, the information is bound to be forgotten. But even if many media keep stressing certain information, this does not mean the vector will flow successfully through the matrix, because the system is not predictable.

The continuum is made of onion rings that move over time while journalists are reporting to editors or a given user is stumbling upon a news story (viewing it on a mobile phone or writing about it on a blog). At the same time that the internal structures of news corporations are processing data through editorial decisions that determine whether a story is worth publishing or not, users are feeding the amorphous internet infinity without any clear filter.
these data reach the internet, they are equally ranked in regard to technical distribution within the matrix. And as the rings go around, the data is continuously clustered throughout the system thus providing a variety of meanings to different inputs regardless of its digital, printed or broadcasted nature. TCP protocol and hypertext structure provides links to a wide variety of documents and organizations, and their electronic constitution allows a perfect integration among peers, so large in number that it is more like a matrix than a system.

As a result, a particular story can be linked to the source material of a company or government website. Later on, witnesses can directly join in the process and the story background might be fed by links to archives. Commentaries from observers add perspective into a growing accumulation of data. The press still plays a major role, but it is surrounded by peers and media devices that are not press themselves. The story turns into a living organism whose nurturing process is composed of several stages that continue after publication. Reporters, editors, witnesses, archives and commenters add different elements, and it is not always clear who is gatekeeping the final material. According to Shank (1993), the key feature of multi-logging is that once a story is published on the internet, the author loses control of it. Control, subsequent comments and responses to the story are shaped as an independent process that no one owns and that rapidly slips away.

Due to the active properties of this electronic matrix, a communication event may happen anytime once an action or reaction takes place within the blogosphere, forums or any interactive interface. This communication event is what proactively passes on the data fall further afield from where they started. An internet viral is, at any given moment, a snapshot of these molecular cycles. E-mail, text, Twitter, RSS updates or social networks allow users to drill down into the information of a particular story. This production process, which integrates data as metatagging, turns the inverted pyramid — once the main model of news making — into a normal pyramid attached to an inverted pyramid. This illustrates the iterative process of new media as a story that is forever unfinished, as it can be always updated. Deuze (2001) has gone further and suggested an octagon as a collection of pyramids, each representing a different but non-linearly interconnected element of the news story. Only the shared peaks of the eight pyramids would be seen as the traditional news lead.

We feel compelled to insist upon the metaphor of an onion and its peeling, a model previously used by Grass (2006), who called his autobiography “Peeling the onion.” As a result it is possible to say that both online interaction platforms and automatic information systems are part of the same onion, for they operate according to the same set of rules and standards (the spectral meaning). The image of an onion is also helpful in describing the idea of single circles attached both to bigger and smaller circles. Likewise, automated and human-dependent systems are convergent and many of them are a mix of these two kinds. Wikipedia and Internet banking are systems which are partially automated and partially human-dependent, and the very buzzword “Web 2.0” is in part an expression meant to describe these mixed platforms.

We are suggesting a concept of meaning that can handle both individual and social dimensions, thus linking the operations of face-to-face communication to irradiations of electronic devices. The concept must relate to communication on these twofold levels: the process of production and circulation of messages and the level of understanding and intentionality. Until now there was no possible way to bind these two phenomena. Luhmann’s perception of meaning circulation — constructivist, evolutionist, unpredictable and contingent — cannot meet a phenomenological approach that accounts for the functional differentiation we addressed as the event in communication. On the other hand, if phenomenology can handle the meaning generation through open systems, it cannot however handle the circulation of infor-
formation also responsible for meaning generation the way system theory has carefully considered. Hence there is a gap between the flow of data and the way it is turned into meaningful communications. In other words, there has got to be an element of electronic meaning other than subjectivity that binds propositional and social meaning.

We owe this bridging element to Deleuze, whose concept of meaning targets both the generation of language and the event in communication. Language would be the effect of an abstract machine that runs over thoughts and signals. These raw signals, which Deleuze calls *phylum*, have not yet become signs and they resemble the substance of expression in Hjelmslev’s linguistics. This reservoir of not-yet-linguistic sounds crashes into the thought. It scratches and enwraps the mind giving birth to the regime of signs — a process Deleuze calls incorporeal transformation. According to Bogue (1989), diagram is what Deleuze understands as association between non-linguistic substance and the thought that will form language and propositional meaning. The diagram comes back again in social meaning processing. In this subsequent social phase, the linguistic content is already arranged in an organized and abstract plane, but the meaning is yet to be produced. At this time the diagram between corporeal and incorporeal series happens again, and the linguistic code creates the event in communication from raw data.

This linking attribute is necessary, for it is what connects propositional to social meaning. This intermingling characteristic provides mobility to the scheme as both inner and outer circles move around the spectrum; as if the layers or rings of the onion could inflate and deflate while the circles grow bigger and smaller. This mechanics that transform propositions into information, and information into communications, is what Deleuze calls an event. The same meaning mechanics were addressed by Boulding (1956), as he argues the meaning of a message is the change which is produced in the image, that is, it would be a global change regarding the effect of the message. This event that gives shape to raw data will be addressed from now on as netclustering process.

5. INSIDE THE ONION RINGS

i. Serialization

In December 1969, a group of researchers sent via the newly operational ARPANET a draft on network protocol standards called Request for Comments (RFC). The first RFC, entitled “Host Software,” was written by Steve Crocker and published on April 7, 1969. The Requests for Comments were written in a less formal style and have since then become typical of internet draft documents. Although there was no internet when the RFC was born, the
technical community acknowledges these packs of documents to have shaped the internet inner structure as it settled the protocol standards.

It started as a few informal memos trying to organize and deliberate about the current state of affairs within the underlying technology of networks, that is, the network protocols. These memorandums would describe methods, behaviors and feasible innovations regarding the rules by which computers exchange information. Later on, these sets of comments would be applicable to the internet and internet-connected systems. The RFC does not address anything related to the content distributed by internet, only to the standards by which the internet works. However, the very standards created by the RFC became an underlying principle of the internet regarding the organization of data.

Each RFC was assigned a unique serial number by an RFC Editor. Once this number was published, it could never be rescinded or modified. The subsequent versions would be published as a revised document in such a way that one RFC supersedes the other (they would become deprecated, obsolete, or even “obsolete”). The serialized RFCs dispose a continuous historical record on the evolution of internet standards and practices. A similar Request for Comment system was established in Wikipedia during its beginnings as an informal process for requesting outside input about article content, particularly in regards to dispute resolution or user conduct according to Wikipedia policies and guidelines. Because of that, any article on Wikipedia has a continuous record available to the public on the tab “history,” a feature very similar to the serialization of the RFCs that deliberated about communication between computers.

These protocols were designed and discussed in an open and collective community whose contributions were bit by bit made available to others. Protocols are not a finished product, and their internal architecture is open in order to allow other people to gain a foothold on it. As the RFC evolved into a method of data clustering, other users began to copy the model and soon computers all over the world were creating and sharing content according to a pattern which later on would be known as the internet.

ii. Netclustering

The internet clustering of data, or simply netclustering, is accordingly a particular method of tagging and routing incoming data transfers. Like the serialization of data, it integrates a model of filtering information that creates opportunities for random data to become a top trending topic or to go viral. In contrast to the world of news organizations or universities, in which fact checking or deep analysis prevail, netclustering and serialization of data nourish a continuous echo through the matrix. When news breaks in the blogosphere, it flows like in the telephone game, so that in each retelling made by peers the facts go further afield from where they started.
The term netclustering is supposed to contrast with the idea of crowdsourcing, a term coined by Jeff Howe (2006) to target a particular distributed problem-solving and production model. If crowdsourcing suggests the broadcasting of problems to an unknown group of solvers in the form of an open call for solutions, netclustering suggests the temporary gathering of online users to pass on information. The word “cluster,” or its gerund form “clustering,” is interesting because while cluster means a closed group of elements closely gathered together, the gerund form clustering implies a disperse amount of similar things to be brought together, assembled together and, finally, crowded together. This way clustering is both closed (as a group) and opened when it comes to its processing (assembling or furnishing with clusters).

To put it another way, at the same time systems are working in an operationally closed way, the processing of meaning is opened to the environment. Netclustering is a process that every peer is not only capable of, but is also entitled to, and its image could explain the linkage between meaning and messages not given in Luhmann’s theory. Netclustering is consequently a process that partially matches the concept of communication as understood by media studies — where the systems are open — and by Luhmann’s theory of social systems — for which systems are closed. A cluster is open to the environment because it is processed in between the environment and the system autopoiesis closure. In Luhmannian terms, it is an interpenetration between the systems-closed dynamics and the environment-opening chaos. Netclustering temporarily groups the system to the environment, and because of that, meaning is processed according to the system selections but oriented according to the environment inputs. The netclustering image also reproduces what Luhmann described as a double contingency, because the clusters can be addressed only during the very process of communication.

iii. Selection

The netclustering framework depicts a different mediascape in comparison to the 20th century media scenario. The press is still a player inside the matrix, and a newsroom may begin information processing any time, based upon an alert that initiates the process of news making. As soon as a journalist or an editor is aware of a breaking story, an alert is sent out. The electronic matrix has changed what was previously a unidirectional procedure based on phone calls into a heterogenous mass of media. Now the same alert can be sent via mobile phones, smart phones or any handheld peripheral. It might be sent by text as an e-mail, news update or even as a tweet or RSS feed, thus instantly notifying the recipients.

Kurt Lewin (1947) first used the term gatekeeping to describe the wife as a person who decides which foods end up on the family’s dinner table. The gatekeeper was consequently the person who decides what should pass through each gate section, of which there are several
in any process. Later on, White (1964) would seize upon Lewin’s comments and relate them to journalism, thus describing the decisions that determine which information will go forward and which will not. That is, gatekeepers would choose which inputs were eligible to enter the information system, therefore controlling the flow of reported events based on principles of news values.

Gatekeeping still occurs at all levels of media structure, only now it has been enlarged to incorporate a multitude of senders and receivers — or Alter and Ego according to Luhmann’s terminology. Gatekeeping means, in regards to the electronic media matrix, the steady operations of selection. That means the function of gatekeeping, which the traditional media previously performed alone, has been promptly redesigned to embody a multitude of sources. Users have since then taken part in the story and redesigned the process through which ideas and information were filtered for publication. What was before an internal decision-making process by the media of relaying or withholding information to people is now a decentralized and dynamic process of following up on a story, with an updating structure that resembles the permanent imputing capacities of an e-mail thread or a web forum — models that bear a resemblance to the RFC standards.

I is interesting to note that gatekeeping for computing sciences implies a different set of operations. A gatekeeper is a device that manages domains and provides call control, providing address information to terminals within the zone and to gatekeepers managing other zones. Gatekeepers control the gateways which, in telecommunications terms, are the devices that interface two different zones and convey the actual information. The understanding of a gatekeeper, according to media theory, resembles otherwise what is depicted in the graph below as a small network. As network scaling with gatekeepers grows to a medium or medium-large network, the gatekeepers fade away and turn into a variant of another gateway.

This particular clustering of electronic data could explain why the peers have no control over the serialization of signals, or to say it another way, why the nodes re-tell the previous facts while also adding some more. This is because gatekeeper and gateway are one and the
same, and a given peer cannot know the extent or the consequences of a given thread. This contingent feature of data interchange has deep impact on chat interfaces inasmuch as a thread is not defined by its commencement, but by its flow. The result is that any simultaneous interactive interface looks like a cross-talk in looping effect; any given phrase is crossed-over by a multitude of utterances in the same screen. Not only the messages but also the contexts from which these messages come are frequently intercrossed. If the cross-talk was a key feature of chat rooms, it has nonetheless become a major feature of social networks such as Facebook or micro-blogging interfaces like Twitter.

iv. Nodes

The most radical outcome of internet, in regards to current business models, was the end of audience as a thermometer for media economics. The concept of audience has ceased to provide meaningful feedback given the lack of a clear public sphere or a physical commons. Instead, electronic media feed the matrix with instantaneous connections between nodes, which pass information further from one to the other and disappear afterwards. Nodes are always given in this temporary settling. They pop out and the general design of a node prevents any subjectively oriented hermeneutics. A node is, after all, a knot whose existence depends on a multitude of nodes within a network. This image of an oscillatory field of nodes was first illustrated by Flusser (1992) as a model that could overcome face-to-face communication. According to the Brazilian-Czech philosopher, a node inspires casual connections and it is always possible to jump from one node to the other in a vast and oscillatory network.

In the vocabulary of information technology, a node is the connection peer that works either as a redistribution point or as a communication endpoint in some terminal equipment. The definition of a node depends on the network and the protocol layer it refers to, while in network or graph theory they might refer to a point in a network topology in which lines intersect or branch from each other. This spatial definition matches the understanding of a node in computer networks, where it refers to data circuit-terminating equipment such as modems, hubs and switches; or data terminal equipment, such as a digital telephone handsets, printers and routers. In both conceptions a node means a point where one or more connections come together, that is, a crossing point that allows the flow of information.

In a local area network, each node can be identified by a MAC (Media Access Control) address, which classifies the network interface. When it comes to the Internet, physical network nodes are identified via host computers, also known as internet nodes, which are organized by IP addresses. If the network in question is a distributed system, the nodes are at the same time users, applications, clients, servers and peers. A peer-to-peer or overlay network allows the nodes to actively route data for the other networked devices as well as themselves, hence being suggestively called supernodes.
According to Yang & Garcia-Molina (2003), node networks can be separated into three different models: pure node networks, hybrid node networks and centralized node networks. In pure node network systems, the entire network is based upon the isonomy of equipotent peers. There is only one routing layer, as there are no preferred nodes with any special infrastructure function: it is solely the architecture which coordinates the user inputs and the automatic terminals. Hybrid node networks replicate the same design, but allow the existence of preferred infrastructure nodes, that is, the supernodes: this is the network model of large institutions and media corporations at the media matrix. In centralized node networks, a central server is used for indexing functions and to bootstrap the entire system. Even though this model presents similarities with the centralized structures (see Paul Baran diagram above), the coming and going of nodes are not determined by any algorithm: this architecture is found in large corporations or national governments networks.

These triadic dynamics, first described by Schollmeier (2002), suggest media matrices cannot be described by means of static features, but rather through its capacity of managing complexity. Under these three different models, the electronic media matrix can reproduce itself as it manages the external complexity and increases the internal complexity of the system. Nodes are in charge of the routine operations on the electronic media matrix, producing a surplus of digital information that they cannot get away from. At the same time the network provides the nodes with a horizon of meaning, it also overloads each node with a surplus of information transmitted through a far wider band than the node can process. This growing flow of data requires a steady input of new nodes sequentially connected to the preceding ones.

6. CONCLUSION

In the spectral mode of communication, the message is fragmentally decoded by multiple users. That is to say, by serial netclusters represented in the graph as small dots all over the spiral. If in a spatial mode of communication the medium conveys meaning and message, in the spectral mode the message relies on multiple clusters to deliver the meaning. The steady sequences of connections clusters one act of communication into the next, creating a dynamic where communication stages are exterior to the very process of communication. From the
point of view of understanding, acceptance or refusal of messages corresponds to the difference between information and message towards the reduction of complexity.

There is no mechanical transmission of information, but a double contingence in which every node is an agent of action for itself and to the others, as well as it is an object to itself and to the others. This Luhmannian insight allows a description of the nodes as the elements that account for the realization of potential communications given within a horizon of meaning. That is, the nodes work between the projected value of potential connections and the actual value of active connections between nodes.

Finally, the description of the spectral meaning resembles the Luhmannian description of serial and steady inputs of communications, binding one act of communication into the other within a horizon of expectations. It is this distinctive serialization of nodes that connects different communication and allows the fusion effect, that is, the gathering of different media that oscillate inside the electronic media matrix. If the serialization turns possible for a node to be linked to another, it is the netclustering that proceed with the reiterative operation that makes data go around. The combination of these two operations allows the nodes to permanently select data.

7. REFERENCES

Hamman, R. (1996). Rhizome@Internet: Using the Internet as an example of Deleuze and Guattari’s ‘Rhizome’.
The Global Conversation and the Socio-Biology of Awareness and Consciousness

Bernard Scott
Cranfield University
Defence Academy – College of Management and Technology
Shrivenham, Wilts, SN6 8LA, UK
B.C.E.Scott@cranfield.ac.uk

Abstract

As stated in the conference call for papers, “The Web has moved from being a one-way communication channel extending traditional media, to a complex "peer-to-peer" communication space with a blurred author/audience distinction and new ways to create, share and use knowledge in a social way.” The theme of this paper is that of the emerging ‘global conversation’ that is being afforded by social media and how, as individual and collectives, we embody, construct and, hopefully, survive the social order of which we are a part.

The paper develops an understanding of what are individuals and collectives drawing on Pask and Scott’s conversation theory, Beer’s viable systems model and Luhmann’s theory of social systems. The stage is then set to identify and address a number of issues, theoretical and practical, that arise as one contemplates the form that the global conversation is taking.

1. Introduction

“No problem can be solved from the same level of consciousness that created it.” Albert Einstein

As stated in the call for papers, “The Web has moved from being a one-way communication channel extending traditional media, to a complex "peer-to-peer" communication space with a blurred author/audience distinction and new ways to create, share and use knowledge in a social way.” The term ‘social media’ is used to refer to the technologies that support these developments. The theme of this paper is that of the emerging ‘global conversation’ that is being afforded by social media and how, as individuals and collectives, we embody, construct and, hopefully, survive the social order of which we are a part.

With reference to the cybernetic theories of von Foerster (1960) and Maturana (1987, 1997; Maturana and Varela, 1987) the theoretical account begins from first principles addressing what is a self-organising system, what is awareness, what is consciousness. The pa-

---

3 The Albert Einstein quotations cited in this paper were taken from http://www.heartquotes.net/consciousness.html (accessed June, 2009).
per then goes on to develop an understanding of what are individuals and collectives drawing on Pask and Scott’s conversation theory (Pask, 1965; Scott, 1993), Beer’s (1972) viable systems model and Luhmann’s (1995) theory of social systems. The stage is then set to identify and address a number of issues, theoretical and practical, that arise as one contemplates the form that the global conversation is taking. These issues include accessibility and social inclusion, ideological conflicts and impasses and the dangers of economic and social collapse.

The discussion of these issues leads to two differing scenarios: the optimistic and the pessimistic. In the paper, each scenario is characterised in broad brush stroke terms. As argued elsewhere (Scott, 2009), the optimistic scenario is predicated on the overall form of the global conversation becoming one in which certain key principles predominate. These key principles are set out in Section 4.

2. Awareness and consciousness

Biological systems are self-organising, autopoietic or, equivalently, organisationally closed systems (Maturana and Varela, 1980). In von Foerster’s (1960) phrase, for a self-organising system, “The rate of change of redundancy is always positive.”

What does this mean in simple terms? It means the system is dynamic and ever changing. The external observer cannot model the system within a fixed reference frame. The system evolves beyond the categories and other metrics he is using to describe it. The system is always becoming more organised, more ‘in-formed’ of perturbations that are affecting it, some of which it distinguishes as coming from its external environment, some of which it distinguishes as coming from its internal environment.

What does ‘internal environment’ mean in this context? What is the form of this system that can have an ‘internal environment’?

Recall that the system is ‘autopoietic’, self-creating, organisationally closed. This means that the system, whatever else it produces as a consequence of its activity, must reproduce itself. Its organisation, as a closed cycle of operations, must be conserved, otherwise, the system ceases to exist as a system.

But note the critical point, the system, as a structure, is ever changing at the same time that the organisation is being conserved. This, the distinction between system organisation and structure is one of Maturana and Varela’s (op. cit.) seminal insights.

Let us now consider the structure of such a system. Possible changes are limited by the degree of ‘structural’ coupling between parts of the system. The concept of structural coupling is a reworking of Ashby’s (1956, 1964) concept of ‘constraint’. For any system some parts are more strongly coupled (connected) than others. This limits the kind and amount of structural change that can occur at any instant. For example, animals with skeletons are constrained by limits on how the limbs move. Plants are constrained by the loads that their branches can support as sub-branches, twigs and leaves. Examples of parts that are not so strongly coupled include, in animals, nervous systems that adapt and grow and hormonal and immune systems that vary enormously in form whilst permitting the system to survive.

We can now turn to the concept of an ‘inner-environment’. We can now see that it consists of a constant procession of structural changes that - and this is the important point to appreciate - are brought into synchrony and maintained as a coherent whole by communicative ex-
changes between the parts. Note, this is not the same as simple signal transmission between parts within a fixed non-self-organising system.  

These communicative exchanges entail parts becoming ‘informed’ of the action of other parts. In Pask’s terms, within a self-organising system there is a ‘proto-conversation’ in which uncertainty amongst the parts as to what to do next becomes resolved. Some parts are aware of other parts as their environment. Some parts are aware of other parts as participants in a proto-conversation, where co-ordinated activities coordinate other activities which coordinate other activities and so on, recursively. This is the flux of structural change. Temporary hierarchical structures emerge from proto-conversations between heterarchically organised (i.e., loosely coupled) parts. As pointed by, amongst others, Pask (1981 1996), these proto-conversations are the ‘seat of awareness’. Self-organising systems are aware of, are paying attention to, those aspects of their structure about which there is uncertainty, which are emerging and evolving and becoming synchronised. Figure 1 is a simple representation of a self-organising system interacting with its environment. The wavy line indicates that the system is distinguishing itself from its environment – and becoming informed of that environment in its own particular way.

![Figure 1. A self-organising system interacting with its environment](image)

It is now a relatively small step to characterise conversation proper as the structural couplings that emerge in the interactions between two or more self-organising systems, as activities are coordinated. There is more about this in the next section. But first let us ask what is the difference between ‘proto-conversations’ within self-organising systems and the ‘proper’ conversations between self-organising systems? The distinction can be made in a very simple way. Proper conversations are ones in which we, the observers, may choose to participate

### Consciousness and conversation

The first point to be made in disentangling the use of terms awareness, consciousness and conversation of consciousness is that to be conscious means literally ‘to know together’ or ‘to

---

4 Von Foerster (2003) refers to systems whose behaviours are fully predictable as ‘trivial systems’. Self-organising systems are amongst the class of ‘non-trivial systems’. Other members of this class are finite state machiners with non-linear recursive relations between inputs and outputs, i.e., the input is or becomes a function of the output. Von Foerster notes that much learning theory and much education appear to be concerned with turning non-trivial machines (the students) into trivial machines.
know with the other’. The term is taken from the Latin, con-scire. In this ‘knowing together’, coordination evolves where the tokens ‘I’ and ‘Thou’ become established as shared tokens for the ‘objects’ that are the participants. In general, objects when perceived and experience as unities are themselves tokens for that which is conserved in interaction. An infant ‘plays with a ball’. The object ‘ball’ emerges as a concept for that which has been experienced as constant in the interaction. Piaget (1972) refers to this as ‘object constancy’. McCulloch (1965) uses the term ‘computation of invariants’. Von Foerster (2003) refers to ‘the computation of a stable reality’.

The coordinations that lead to the ‘I’ and ‘Thou’ referencing are thus those in which the participants are computing (modelling) each other as self-organising systems, as systems which distinguish objects, and, at higher level of recursion, as systems which are self-distinguishing. It is this point, where a self-organising system distinguishes itself as a distinguisher of self and other objects, that the system can be said to be ‘conscious’ in the sense of knowing with itself that it is a self. Up to this point this knowing with oneself has been imminent in the proto-consciousness of awareness.

Figures 2 and 3 are intended to depict the processes by which two self-organising systems come to be conscious with each other such that their actions are coordinated within a consensually distinguished domain of action. The horizontal arrows indicate the ‘provocations’ that coordinate the coordinations as in a Wittgensteinian ‘language game’. A simple example would be two conversants using gestures to coordinate their joint action of lifting and carrying a heavy object.

![Figure 2. The beginnings of a conversation through provocations and intersecting domains of action](image)

---

5 For more on the etymology of ‘consciousness’, see Lewis (1967).
6 Maturana uses the term ‘languaging’ for these recursive forms of distinguishing and coordinating. See Maturana (1987, 1985).
7 ‘Provocation’ is Pask’s (1975) term for the higher level coordinations that Maturana refers to as ‘languaging’. For an extended discussion of ‘language games’, see Wittgenstein (1959).
Glanville (2009) summarises the form of conversation in the following way:

*A conversation is a circular, mutual error correction system that maintains both individuality of point of view and individual difference. It requires at least 2 distinct points of view (personae) able to utter and listen, turn and turn about, in some medium, in order to construct individual meanings that, while distinct and without intersection, are compatible, allowing participants to behave as if their meanings were shared, thus creating a means of both communicating a learning, and viable agreements.*

A conversation operates at 3 levels: in the middle, the level of the conversation itself; below that, the (agreed) topic of the conversation; above it, the conversation about the conversation and its progress. These levels may slide, so that, for instance, the topic of the conversation may be explored in a conversation, as may the conversation about the conversation. Thus, a conversation is stable in change.

These conditions are minimal. In practice, practiced conversationalists do not check turn and turn about, but only every so often. In practice, too, there may be more than 2 points of view (which may all reside within one entity). And in practice the topic of the conversation is under constant review, as conversation develops. Finally, in practice, an agreement reached in a conversation may be the agreement to disagree and never means that the individual meanings generated are the same.

A conversation may have many other aspects, such as mood and style: the above account refers to the mechanisms by which a conversation may work.8

3. Individuals and collectives

Understanding ‘consciousness’ as shared knowing, as described in previous sections, moves us naturally to an understanding of humans as social animals. It is the knowing with the other that supports ‘languaging’ (see footnote 3) and that, in turn, is sported by languaging. As Mead (1934) puts it, ‘The self is a social process.” (For more on this theme, see Scott, 2007.)

---

8 For more on Glanville’s approach to conversation theory see Glanville (2002) where he sets out the conditions for having ethically and epistemologically sound conversations. On the theme of what is a ‘good’ conversation, see also Pask (1975, 1976) and Habermas (1990).
Pask in his conversation theory (CT) offers us an interesting way of characterising individuals and collectives. He draws a fundamental distinction between the system that is the conversation and the system that embodies the conversation. The first kind of system he refers to as a ‘psychological individual’. His short hand term for these is ‘p-individual’. The second kind of system, the one that embodies a conversation, he refers to as a ‘mechanical individual’ or ‘m-individual’. The chief exemplars of m-individuals are biological systems, such as human brains and bodies, that have the potential to become conscious, He uses the more general qualifier ‘mechanical’ to indicate he is open minded about there being other forms of system that might embody consciousness and speculated that planets and suns might be examples of such.

The great usefulness of Pask’s distinction is that it frees us from the requirement to identify consciousness with one particular embodied individual. In addition to simple one to one mappings between p-individuals and m-individuals, there may be one to many mappings, as when contemplating social organisations, and also many to one mappings, as when one contemplates the conversation which is the consciousness with herself of the embodied p-individual. This better corresponds to the idea, developed-my Mead (op.cit) and others that the self has the form of a collective.

With one stroke Pask unifies individual and social psychologies. He also provides us with an elegant account of what is a ‘social system’. A social system is a p-individual. Pask’s p-individuals can be thought of as belief systems whose stability arises from their continued tendency to reproduce themselves. The systems are organisationally closed. As Pask puts it (Pask 1996), “Conceptualisation is conserved.” One cannot not conceptualise; one cannot not converse.

The next section takes up the theme of the emerging global conversation in the context of possible world futures.

4. World futures, issues and principles

“In everything as simple as possible, but not simpler.”
Albert Einstein

In Scott (2009), I discuss the relevance of sociocybernetics for addressing issues associated with possible world futures. I make a distinction between first order problems, those that are associated with ‘observed systems’ and those that are associated with ‘observing systems’.

Figure 4 is an attempt at a holistic view of a wide range of first order issues that demand our attention.

A reading of figure 4 gives us two basic scenarios, with many, many variants in between. If the ‘tipping points’ indicated in the figure are passed, then major ecological and social dis-

9 For further development of this theme, see Boyd (1993). Luhmann’s autopoietic social systems are analogous to Pask’ p-individuals. For a comparison, see Scott (2001).
10 See von Foerster (2003) for more in the distinction between observed and observing systems.
aster will follow.\textsuperscript{12} This is the pessimistic scenario. The optimistic scenario is that somehow humanity, as a species, is galvanised into radical action to avert disaster.\textsuperscript{13} What we are looking for here is a different tipping point, one in which within the emerging global conversation, there arises enough shared awareness to trigger effective action, locally and globally. As good sociocyberneticians, and good citizens we should all be working to bring about this latter change.

The reference to ‘the global conversation’ is a way of attempting to address second order issues in a holistic way. The concept of the global conversation refers to something that is emerging but is still at a stage of immaturity. It is fragmented. It exhibits pathological forms of belief system that engender conflict, rather than harmony.\textsuperscript{14} Figure 5 depicts the form of a belief system.

Rescher (1973, 1977) develops the model shown in figure 5 in his discussion of how ‘science’ has emerged as a rationally justified endeavour. There is a conceptual system that is modified by (1) the tendency to seek logical consistency and coherence and (2) the pragmatic correction that comes from experiences within a particular domain of action. In turn, modification of beliefs leads to modification of forms of action. The model, suitably interpreted, can be applied to all forms of belief and action. A key point to appreciate is that many beliefs are accepted dogmatically, requiring experience to be subordinate to belief (i.e., only certain kinds of experience are possible) and action to conform to the rules incorporated in the dogma. As noted many writer (Wexler, 2006, is a recent example), beliefs, once embodied in an individual, may be very difficult to modify.\textsuperscript{15} How to change beliefs in a positive direction is the main theme of this paper.

It is proposed that all harmonious, non-pathological forms of belief must be founded on some key principles. These founding predications are:

1. For humans there is one shared gene pool.
2. There is one shared ecosystem

\textsuperscript{12} The Ehrlich-Commoner IPAT equation is frequently cited in this context: \(I = P \times A \times T\), where \(I\) is impact, \(P\) is population, \(A\) is affluence and \(T\) is technology. For more, see \url{http://www.eoearth.org/article/IPAT_equation} (accessed June, 2009). A related measure is Rees’s ‘ecological footprint’ measure, \(EF = P \times C\), where \(P\) is population and \(C\) is per capita consumption. (See Wackernagel and Ress, 1992.) Rees (2009) summarises thus: “Our ecological footprint work reveals that the typical North American is 4-5 times ‘larger’ than the average world citizen and 20-30 times larger than an impoverished peasant in any of the world’s poorest countries. It also shows why the US, with only 4.7% of the world’s population uses 20-25% of just about everything (23% of commercial energy, for example).”

\textsuperscript{13} One new and controversial development is a non-surgical sterilisation procedure for women using ‘quinarine’. See \url{http://home.windstream.net/bsundquist1/qs.html} (accessed June 2009).

\textsuperscript{14} For related ideas about the emerging global conversation and global consciousness, the reader might like to consult Vernadsky (1998) and de Chardin (1959), both of whom use the term ‘noosphere’ for this emergent.

\textsuperscript{15} “During early development and maturation, social, cultural and sensory experiences actually shape the individual’s brain structures and synaptic circuitry in an ‘image’ of those experiences. Once entrenched, these neural structures alter the individual’s subsequent experience and perception. People tend to seek out experiences that reinforce their pre-set neural circuitry and to select information from their environment that matches these structures. Conversely, when faced with information that does not agree with their internal structures, they deny, discredit, reinterpret or forget that information.” (Wexler 2006, p. 180)
3. To be viable (in the sense of Beer, 1972), the human species must address both first and second order problems holistically and in complementary ways.

Figure 4. An attempt at a simple holistic overview of some global problems

In short, equitable access to resources and social justice is predicated on there being enough shared psycho-social reflective awareness to provide the shared will to bring about the necessary changes. By the same token, only equitable access to resources and social justice can bring about the necessary sufficiency of shared psycho-social awareness.


5. Education for awareness

The aim (of education) must be the training of independently acting and thinking individuals who, however, can see in the service to the community their highest life achievement. Albert Einstein

---

16 Beer’s ‘viable systems model’ sets out the key kinds of control and communication that must occur within a system for it be viable. Like Pask’s p-individuals, Beer’s viable systems can be recursively nested. In Beer’s early work, the concept of organisational closure is implicit. In his introduction to Varela and Maturan’s (op.cit.) seminal book, he acknowledges that the authors have made the concept explicit.
Elsewhere, I have argued for the importance of access to formal educational systems as a key way to facilitate the required changes in human beliefs and culture (Scott, 1998). I have also highlighted what can be offered by the use of technology (e-learning) to broaden access to educational opportunities (Scott, 2004). Now with the emergence of what is referred to as Web 2.0 (roughly a much wider user of social networking tools and the creation of new tools and applications for the creation and publication of content) the emphasis is shifting from formal to informal education, much as in the spirit of Illich’s (1976) vision of a ‘de-schooled’ society.\(^{17}\) It remains to be seen if there will be major changes in how formal education and training are currently delivered.

In short, the opportunity now arises as never before, for the ‘grass roots’ contributions of individuals and small groups to drive the global conversation in desired directions.

At this stage it is not obvious what the collective conversation might lead to in terms of effective action. Political reform, economic reform and ecological reform are all implicated. The key idea to appreciate is that the conversation about possible solutions is the first step towards possible solutions.\(^\text{18}\)

Elsewhere (Scott, 2009) I have discussed what sociocybernetics has to offer as conceptual tools to aid us in solving our problems. Here I just wish to stress the importance of disseminating two fundamental principles:

1. Each of us has responsibility for the consequences of holding a particular set of beliefs.

2. That there is no once and for all truth to be established about who we are and what we may do. The global conversation is open-ended.

The above metatruths have been promoted by major cybernetic thinkers in various contexts. One of the clearest and most succinct formulations is to be found in von Foerster (1993). As signalled by the title of a collection of his papers (Understanding Understanding, von Foerster, 2002), we need to disseminate an understanding of what it is to understand. If we do this, perhaps there will be a change of global consciousness in the desired directions.

From this holistic sociocybernetic perspective, social media can be seen as playing a critical role in that, because they afford the possibility of conversational interaction, they may serve as safeguards against the nightmares of propaganda and ideological ‘brainwashing’ that so frequently pass for ‘education’.

There are many initiatives taking place that appear to be heading in the right direction. There are now several ‘open learning’ initiatives that give access to university level course materials (as examples, MIT and the UK Open University). On May 19th, 2009, the United Nations Global Alliance for Information and Communication Technology and Development (GAID) launched the world’s first tuition-free online university.\(^\text{19}\) At the time of writing some 200 students from 52 countries have already registered, with a high school diploma and a sufficient level of English as entry requirements.

There are also a number of organisations that are dedicated to promoting world harmony, for example, the World Harmony Association (WHA).\(^\text{20}\) The WHA aims to deliver appropriate kinds of educational intervention using learning technologies (e-learning) to support a distributed global academy dedicated to ‘education for harmony’.

In the 1930s, the English novelist and social philosopher, H. G. Wells, in his discussion of the coming of an electronic ‘world brain’, referred to the race between education and global disaster (Wells, 1938). The race is on!

6. Concluding comments

A human being is a part of a whole, called by us ‘universe’, a part lim-

\(^{18}\) As reported by Thomas Friedman of the New York Times, moderate voices in Iran are conversing using Web 2.0 social networking tools. Friedman refers to this phenomenon as the creation of a ‘virtual mosque’. See http://www.nytimes.com/2009/06/17/opinion/17friedman.html?_r=1&emc=etal (accessed June 2009).


\(^{20}\) See http://www.peacefromharmony.org/ (accessed June, 2009). The WHA site includes a listing of more than 100 other organisations dedicated to world harmony.
The strong anthropic principle,\footnote{For a history of how this concept has evolved, see http://en.wikipedia.org/wiki/Anthropic_principle (accessed June, 2009).} which states in various ways that humankind are the glorious noontide peak of reflexive awareness in the cosmos, that we live in a universe set up to allow our existence, should not be taken as a route to the dangers of hubris, rather it should be taken as a reason for humility. Recall also that from the perspective of second order cybernetics (von Foerster, 2003) and its close cousin, radical constructivism (von Glasersfeld, 1995), the universe that physicists refer to is itself a construct. To be an observer is to bring forth a universe of experience. It is only through coordinations of coordinations between observers, as shown in figure 3, that a universe is jointly distinguished.

From a more humble perspective we may contemplate not only what is wonderful about human culture and consciousness, we may also contemplate what may have been lost from our awareness in our discovery of reasoning by reflecting, describing and explaining. I have in mind here Bruner’s (1973) ‘knowing by the left hand’ and Don Juan’s ‘seeing’ as direct knowing, ‘silent knowledge’ (Castaneda, 1972).

It behoves us all to take stock of how we construct ourselves as friends, family members, citizens, learners and teachers. We should also take stock of our states of being. Are we enjoying being alive? Are we open to the unexpected and the unknown?

References
Wells, H G (1938). World Brain, Doubleday Doran, Garden City, New Jersey.
Abstract

The scales of space and time with which the humans observe, live and construct their world, are one of the elements that determine the human perspective; the ones with which the systems observe, constitute and construct their longevity are one of the elements that determine the sustainability. In our time, the human perspective and the sustainability are entering in evolutionary processes in scales of space and time aliens to the human perception and experience. Thus, the dynamics of innovation of technologies that support the new emergent social media can steer to subjects as the singularity. Tools of first and second order cybernetics help to answer questions like: What relationship can be found between the scales of space and time of the human perspective and of the sustainability and the dynamics of the new social media technologies? How such exploration enriches the understanding of social systems and human behavior? What contributions can be offered from such analysis and synthesis to contribute to sustainable development? This paper looks for relationships between the scales of space and time and a model of a system formed by data, information, knowledge, understanding and wisdom, trying to address the dynamics of daily human life that will help to understand the strong human attraction to emerging social media and to envision how could the existing ones be amended or how new ones could be created in order to give new hopes of sustainability for a human species with an increasing risk of disappearing.

Space and time scales

The scales of space and time with which the humans observe, live and construct their world, are one of the elements that determine the human perspective. The scales of space and time with which the systems observe, constitute and construct their longevity are one of the elements that determine the sustainability.

For analyzing the above, with all the other possible approaches, let’s first follow Meadows (1972) at the very beginning pages, the least mentioned by others, of their “Limits to Grow”:

HUMAN PERSPECTIVES
Every person in the world faces a series of pressures and problems that require his attention and action. These problems affect him at many different levels. He may spend much of his time trying to find tomorrow’s food for himself and his family. He may be concerned about personal power or the power of the nation in which he lives. He may
worry about a world war during his lifetime or a war next week with a rival clan in his neighborhood.

These very different levels of human concern can be represented on a graph like that in [Figure 1]. The graph has two dimensions, space and time. Every human concern can be located at some point on the graph, depending on how much geographical space it includes and how far it extends in time. Most people’s worries are concentrated in the lower left-hand corner of the graph. Life for these people is difficult, and they must devote nearly all of their efforts to providing for themselves and their families, day by day. Other people think about and act on problems farther out on the space or time axes. The pressures they perceive involve not only themselves, but the community with which they identify. The actions they take extend not only days, but weeks or years into the future.

A person’s time and space perspectives depend on his culture, his past experience, and the immediacy of the problems confronting him on each level. Most people must have successfully solved the problems in a smaller area before they move their concerns to a larger one. In general the larger the space and the longer the time associated with a problem, the smaller the number of people who are actually concerned with its solution.

There can be disappointments and dangers in limiting one’s view to an area that is too small. There are many examples of a person striving with all his might to solve some immediate, local problem, only to find his efforts defeated by events occurring in a larger context.

Figure 1. Human Perspectives. The majority of the world’s people are concerned with matters that affect only family or friends over a short period of time. Only a very few people have a global perspective that extends far into the future. (Meadows et al., 1972).

Meadows and friends wrote it without mentioning any reference at all. It’s their way of observe others observers of the system and an explanation of the forms of living within the system. It also is a provocative subject for further research not only because of its implications on theory but in practice and action of and over human perspectives. It should be of particular interest for sociocybernetics.

Now, and second, let’s follow Costanza and Patten (1995) on their approach to understand and define sustainability from a system space and time scale perspective:
The basic idea of sustainability is quite straightforward: a sustainable system is one which survives or persists. But there are three additional complicating questions: (1) What system or subsystems or characteristics of systems persist? (2) For how long? (3) When do we assess whether the system or subsystem or characteristic has persisted? [we] address these questions by acknowledging that sustainability can only be assessed after the fact, that one must look at systems and subsystems as hierarchically interconnected over a range of time and space scales, and that each of these systems and subsystems has a necessarily finite life span.

[...]. But choosing particular systems or subsystems and specific characteristics as the objects to sustain (presumably forever) hides the hierarchical interactions between systems and subsystems over a range of scales in space and time. [...]

When one says a system has achieved sustainability, one has to specify the time span involved. Some would argue that sustainability means "maintenance forever". But nothing lasts forever, not even the universe as a whole. Sustainability thus cannot mean an infinite life span or nothing would be sustainable. Instead, we argue it means a life span that is consistent with the system's time and space scale. A sustainable system in this context is thus one that attains its full expected life span within the nested hierarchy of systems within which it is embedded. We refer to this nested hierarchy of systems and subsystems over a range of time and space scales as the "metasystem".

[...] A system is sustainable if and only if it persists in nominal behavioral states as long as or longer than its expected natural longevity or existence time; and - neither component- nor system-level sustainability, as assessed by the longevity criterion, confers sustainability to the other level.

[...] But one can now ask: why should small-scale systems have shorter life spans than larger-scale systems? Why don't cells or individual organisms last forever? We suggest that this is an outcome of the nested hierarchical interrelationship of systems across scales (the metasystem) that is necessary for evolutionary adaptation. Evolution cannot occur unless there is limited longevity of the component parts so that new alternatives can be selected. And this longevity has to be increasing hierarchically with scale as shown schematically in [Figure 2]. Larger systems can attain longer life spans because their component parts have shorter life spans which allow the system to adapt to changing conditions. But without "death" at the lower scale, there can be no evolutionary change at the higher scale. Sustaining life requires death.

[...] Systems with an improper balance of longevity across scales can become either "brittle" when their parts last too long and they cannot adapt fast enough [...] or "unsustainable" when their parts do not last long enough and the higher level system's longevity is cut unnecessarily short.

So with the above, we have an explanation of why the Earth as a system has “brittle” subsystems nowadays, mainly the “old” humans that has managed to change its longevity from about 30-40 years to 60-70 years in short time, and also has become “unsustainable”, with subsystems disappearing faster than ever (Ozone hole, polar melting, species extinction, etc.).

**Better and worse and faster**

Now that we have exposed human perspectives and sustainability space and time scales in some sort of first and second order studies let’s move to an approach of their dynamics. We live in a time in which as much the human perspective as the sustainability are entering in evolutionary processes with position, direction, speed and acceleration dynamics in scales of space and time beyond the human perception and experience. In the words of Tom Atlee: “Things are getting better and better and worse and worse faster and faster.” Now it is not the
change that matters, not even its velocity, the real problem is its acceleration, and there is a law that try to explain that.

![Figure 2. Sustainability as scale (time and space) dependent concept. Indicates this relationship by plotting a hypothetical curve of system life expectancy (Longevity) on the y axis vs. time and space scale on the x axis. (Costanza and Patten, 1995).](image)

The Law of accelerating returns, as exposed by Ray Kurzweil (1999; 2005) is a compact and simple body of knowledge that states that: “As order exponentially increases, time exponentially speeds up (i.e., the time interval between salient events grows shorter as time passes).” It is part of his more general Law of time a chaos: “In a process, the time interval between salient events (i.e., events that change the nature of the process, or significantly affect the future of the process) expands or contracts along with the amount of chaos.” So the problem here is that the first order approach tells us that space and time scales are changing in the observed system while a second order study tells us that, for the majority, as pointed above, observer capabilities are not, not only for will but because inherent system capabilities.

But as the law of accelerating returns shows, the dynamics of innovation of information and communication technologies that support the new emergent social media can demand, for example and among many other subjects, to consider future scenarios events as deep as the singularity, in which “the pace of technological change will be so rapid, its impact so deep, that human life will be irreversibly transformed.” The observer changes over the observed system will change the observer itself.

And in part that’s why we need tools (Geyer, 2004) of first-order cybernetics (e.g., boundaries, sub- and supra-systems, circular causality, positive and negative feedback and simulation), and of the second-order cybernetics (e.g., self-reference, self-steering, self-organization, self-catalysis and autopoiesis) to face, with a wide range of alternatives, what could be the problems of the future. With its distinction between first order studies of observed systems and the second order study of observing systems, sociocybernetics provides a unifying epistemological and methodological conceptual framework (Scott, 2008).
DIKUW Hierarchy

What relationship can be found between the scales of space and time of the human perspective and of the sustainability and the dynamics of the new social media technologies? How such exploration enriches the understanding of social systems and human behavior?

To answer these questions let’s explore possible relationships between the scales of space and time (observable by analyzing the human perspective and sustainability) and a basic model of the structure and dynamics of a system formed by data, information, knowledge, understanding and wisdom, known as Data Information Knowledge Understanding and Wisdom (DIKUW) Hierarchy (Bellinger et al 2002; Betts, 2003; Sharma, 2009). In Spanish it is called Cadena DICES (Gallón and Robledo, 2004).

As Sharma (2009) explains, the Data Information Knowledge Understanding and Wisdom Hierarchy (DIKUW) has been gaining popularity in many domains. In most Knowledge Management literature the hierarchy is often referred to as the "Knowledge Hierarchy", or the “Knowledge Pyramid”, while the “Information Science” domain refers to the same hierarchy as "Information Hierarchy" or “Information Pyramid”. It all depends on the observer background.

But what is exactly the DIKUW Hierarchy? It is a tool to give context and to create a reference frame so that the discussions that knowledge, innovation, process, and particularly, technology management try to approach to, can be conceptually consistent and coherent. The hierarchy is shown in Figure 3.

Figure 3. Data Information Knowledge Understanding and Wisdom (DIKUW) Hierarchy. Following Bellinger et al (2002) and Betts (2003).

“Context independence” is related to the degree of differentiation within a system of one of its subsystems or components, while “Discovery level” is related to the work made by an observer. Some of the reasonings that are generated from the description of the hierarchy are (Bellinger et al, 2002):

- A collection of data is not information
- A collection of information is not knowledge
• A collection of knowledge is not understanding
• A collection of understanding is no wisdom
• A collection of wisdom is not truth

This way the activities related to the processing of information will support, according to the level of discovery, the construction of answers to the related level questions, which of course have interest for this work like fundamental components of the task of understanding space and time scales of everyday dynamics as we will see below. But digging more on the Figure 3, some more ideas should be presented. According to Russell Ackoff (Bellinger at al, 2002; Ackoff, 1989) the content of the human mind can be classified into five categories:

• Data is related to symbols, it simple exists by observation.
• Information is related to description, definition or perspective (what, who, when, where) by data relationships.
• Knowledge is related to strategy, practice, method or approach (how) by information patterns.
• Understanding is related to causes (why) by knowledge principles.
• Wisdom is related to origin, principle, understanding, intuition, moral or ethics (what for) by understanding laws.

Ackoff indicates that the first four categories relate to the past because they deal with what has been or what is known. Only the fifth category, wisdom, deals with the future because it incorporates vision and design. With wisdom, people can create the future rather than just grasp the present and past. But achieving wisdom isn't easy mainly due to the fact that people must move successively through the other categories working hard on every discovery level.

Complicated and mundane and complexity

When the observer doesn’t have to work so much and the observed system or component is well differentiated, one says that the situation is a complicated one. When the observer does have to work so much and the observed system or component isn’t well differentiated one says that the situation is a mundane one. In between those situations, with some kind of a balance between system differentiation and observer work, it is possible to say that one is in a complexity situation. An example of a complicated situation is that of trying to pass an examination on calculus without having studied enough. An example of a mundane situation is read the daily horoscope in a newspaper. An example of a complexity situation is to fix the Hubble space telescope orbiting the Earth at thousands of kilometer per hour.

There are then some sort of borders, the complicated-complexity and the complexity-mundane, where crossing constitutes one interesting moment when something can become part (or not, depending on the direction) of the DIKUW Hierarchy. The transactions observer-system that happens over the borders constitutes one interesting field of research and are not the scope of this paper. Figure 4 try to clarify the possible situations and borders.
Figure 4. DIKUW Hierarchy and Complexity. Following Bellinger et al (2002) and Betts (2003).

For every field of study or research it could be possible to draw a border, over the Context independence – Discovery level plane that could be called the “Knowledge frontier”. It is also possible to not just think on a two dimensional plane and move to other with tree or more dimensions, which is another interesting field of research beyond the scope of this paper.

Social media and synchronization

How is it possible to explain the symptoms of well-being and discomfort that provoke the emerging social media technologies? One possible explanation could be the type and degree of synchronization between observer system and observed system space and time scales. With respect to human perspective dynamics synchronization with social media dynamics, Kubey and Csikszentmihalyi (2002) presented a research on how people live everyday, in particular its relationship with video (television). Watching TV, following what was said above, could be classified as a situation of low discovery level - low context independence activity occupying a complicated-complexity-mundane area on the DIKUW hierarchy that can be named Apathy zone (see below) and happening in observer small space and time scales (i.e., the ones related to few hours and personal or familiar nucleus).

These are some of the main Kubey and Csikszentmihalyi (2002) findings:

That does not mean that watching television, per se, is problematic. Television can teach and amuse; it can reach aesthetic heights; it can provide much needed distraction and escape. The difficulty arises when people strongly sense that they ought not to watch as much as they do and yet find themselves strangely unable to reduce their viewing. Realizing when a diversion has gotten out of control is one of the great challenges of life.

Producers of educational television for children have found that formal features can help learning. But increasing the rate of cuts and edits eventually overloads the brain (Cognitive overload). More than 25 years ago psychologist Tannis M. MacBeth Williams of the University of British Columbia studied a mountain community that had no television until cable finally arrived. Over time, both adults and children in the town
became less creative in problem solving, less able to persevere at tasks, and less tolerant of unstructured time. Although much less research has been done on video games and computer use, the same principles often apply. The obvious difference from television, however, is the interactivity. The ability of Web sites to hold the user's attention seems to depend less on formal features than on interactivity. Maintaining control over one's media habits is more of a challenge today than it has ever been.

New social media is based on interactivity, some advanced sort of synchronization emergent capability. The problem arises when that synchronization is not related to either observer or observed system advance over the DIKUW hierarchy when, for example, the observed system becomes a virtual reality (contrary to real reality) or published opinion (contrary to public opinion) based just on data or information.

**From apathy to flow**

Finally it will be addressed the question of the dynamics of daily human life in relation to the scales of space and time and the DIKUW hierarchy through a proposal from psychology (Bellinger, 2004) little related before with this kind of work and that will help to understand, on one hand, the strong human attraction to emerging social media and, on the other hand, to try to envision how could the existing social media be amended or how new ones could be created in order to introduce on the horizon new support tools for sustainability of a human species with an increasing risk of disappearing.

Csikszentmihalyi (Farmer, 1999) saw optimal human activities in what he calls the "flow" channel, a path moving outward as skills are gained and as challenges are higher, certainly before apathy sets in. Other feelings range from anxiety (Low skills - High challenge) to boredom (High skills - Low challenge) as shown in Figure 5.

![Figure 5. The “Flow” channel. (Farmer, 1999)](image-url)
Figure 6 summarized Csikszentmihalyi’s results of his empirical research in terms of the main feelings reported for the various combinations of skills and challenges in the various activities undertaken.

Can daily life human activities become a flow experience? At what observer and observed system’s space and time scales will that happen? Csikszentmihalyi focused particularly on the small space and time scale, home, life aspect. He argues that most people don't seem to know how to use their leisure time. An approach with perhaps less certainty in the placement of the different activities, and as in Figure 7, shows the typical placement of general "home life" activities.\(^{22}\)

---

\(^{22}\) As a human activities research it should be universal, but it’s important to notice here that, for example, not everybody has the opportunity for “driving” or worst, “study” in a planet with hundreds of millions surviving in poverty.
By the other hand, and going back to DIKUW hierarchy following Bellinger (2004), note that the sequence data -> information -> knowledge -> understanding -> wisdom represents an emergent continuum. That is, although data is a discrete entity, the progression to information, to knowledge, to understanding and finally to wisdom does not occur in discrete stages of development. One moves along the continuum as one's discovery level develops (related to the observer), and context independence evolves (related to the observed).

Everything could be relative, and one can have partial discovery of the relations that represent information, partial discovery of the patterns that represent knowledge, partial discovery of the principles that represent understanding and partial discovery of the laws which are the foundation of wisdom.

With that in mind, let’s extend the interpretation and understanding of complexity relating both, DIKUW hierarchy and Csikszentmihalyi’s Flow channel.

Csikszentmihalyi provides a definition of complexity based on the degree to which something is simultaneously differentiated and integrated (Bellinger, 2004). That way complexity evolves along a corridor related to flow as indicated in Figure 8. What has an appropriate balance between differentiated and integrated could be classified as complex. While the complicated is related to high levels of differentiation without integration, the mundane is highly integrated without differentiation.

Finally, let’s try to relate, on one hand, the different variables of observer (second order) dynamics explained above: discovery level, skills and integration and, on the other hand, the different variables of observed (first order) system characteristics: context independence, challenges and differentiation, and the result is a new and revealing plane of structure, relationships, feelings, hierarchy and dynamics of complexity. Figure 9 depicts these fusions and, just for the mental exercise, try to imagine the points of Figure 1 over the Figure 9 as way to understand the space and time scales of the human perspective in relationship with complexity, with sustainability.

Figure 8. Flow and Complexity. (Bellinger, 2004)
Discussion

People tend to avoid the complicated and are uninterested in the mundane, but the complexity that exists between these two alternatives is the path they generally find most attractive (Bellinger, 2004). Why then is it that most people find it too difficult to organize themselves towards more satisfying activities, but rather pursue apathetic ones? There is a clear need to overcome the initial resistance to do other than apathetic activities (those that don't need initiation by the person) (Farmer, 1999).

In *Finding Flow*, Csikszentmihalyi (1997) gives some insight answers:

> What makes a life serene, useful, and worth living?
> The choice is simple: between now and the inevitable end of our days, we can choose either to live or to die. Biological life is an automatic process, as long as we take care of the needs of the body. But to live [...] means it is by no means something that will happen by itself. In fact everything conspires against it: if we don't take charge of its direction, our life will be controlled by the outside to serve the purpose of some other agency. Biologically programmed instincts will use it to replicate the genetic material we carry; the culture will make sure that we use it to propagate its values and institutions; and other people - will try to take as much of our energy as possible to further their own agenda - all of this without regard to how any of this will affect us. We cannot expect anyone to help us live; we must discover how to do it by ourselves.

> [...] There is no hope in the past. There is no solution to be found in the present. Nor will we be better off by jumping ahead into an imaginary future. The only path to finding out what life is about is a patient, slow attempt to make sense of the realities of the past and the possibilities of the future as they can be understood in the present.

> [...] Whether we like it or not, each of us is constrained by limits on what we can do and feel. To ignore these limits leads to denial and eventually to failure.

> [...] The cycles of rest, production, consumption, and interaction are as much a part of how we experience life as our senses-vision, hearing, and so forth-are. Because the nervous system is so constructed that it can only process a small amount of information at any given moment, most of what we can experience must be experienced serially, one thing after the other.
Then, within apathetic situations in life, it is possible to have two alternatives activities: Autotelic, where people do things for its own sake because to experience it is the main goal, and Exotelic, where people are motivated by an outside goal. The question is if the space and time scales of human perspective depend on autotelic capabilities or, by the contrary, autotelic capabilities are the ones that define them. Either one or another, new social media seems to enhance the perspective via the autotelic side.

Conclusions

New explanations were proposed in order to understand human perspectives and sustainability space and time scales. Through the DIKUW hierarchy and the Flow channel were proposed a new unified model for first and second order structure and dynamics analysis and synthesis and a framework for study and design new social media environments.

This work is made as a part of a research on modeling complex systems with tools such as System Dynamics (Gallon et al, 2009), where it is necessary to determine scales, boundaries, sub- and supra-systems, causality, positive or negative feedback and simulate the observed system but with the aim to also advance on the understanding on new ways to follow in order to analyze and synthesize the model in relation to second-order cybernetics, in making autotelic -via new social media- activities central on sustainability as an autopoietic system.

This is a small contribution to sustainable development research and practice using sociocybernetics frames that propose a new kind of relationships frameworks that can help to understand how to discover new relations, patters, principles and laws. But that discovery is based on intelligent questioning that depends on predictive-speculative processes not only over the complexity channel but all over the complicated and mundane ones.

A human daily life whose favorite activity is based on integrate and differentiate observed and observing systems advancing through the complexity of the DIKUW hierarchy is a way for understanding the evolution of the pressures and the boundaries of information and communication technologies that support the emerging social media. It is a way to advance on the synchronization between life cycles of the different scales of space and time that characterizes the longevity (sustainability) of each one of the components of a system.

The key scales for sustainability are the ones with at least children’s lifetime time scale and world (i.e., the planet Earth) space scale on the first and second order, but the key human activities to reach them as a normal human perspective depends on autotelic capabilities (It could be argued that exotelic mediated development is not sustainable).

When Scott (2002) indentifies the sociocyberneticians human perspectives as ones with an agreement on problems faced as global and to be tackled holistically, addressing both the first-order complexity of interconnected observed systems and the second-order complexities of communities of observers, the call if for a DIKUW Hierarchy plus Flow Channel based, new social media mediated, sustainability revolution.

References


Journal of Sociocybernetics, 7 (S) (2009) 45


Scott, B. (2008). The role of sociocybernetics in understanding world futures. 8th International Conference of Sociocybernetics Complex systems, interdisciplinarity and world futures. Ciudad de México.

Electronic Money: Its Economic, Social, Political, and Environmental Impact

Shann Turnbull PhD  
sturnbull@mba1963.hbs.edu  
Principal, International Institute for Self-governance  
.sturnbull@mba1963.hbs.edu ; Skype and Google ID: shann.turnbull  
.+612 9328 7466; +612 9327 1497; Cell +612 418 222 378

ABSTRACT

Modern money no longer provides satisfactory price signals to either direct or control a market system because its value cannot be defined in terms of any specified goods or services. The emergence of electronic money defined in terms of data or other quantifiable resources has established a basis for market economies to be governed by feedback signals from consumer demands and the natural environment. To illustrate the systematically dysfunctional features of money modern and how it compares with historical alternative forms of money, four varieties of e-money are considered: (i) the current form of synthetic or “fiat” legal tender that can earn interest (ii), fiat money that does not earn interest but has a usage fee (iii) “Free-money” issued privately with a usage fee and (iv) “natural” money redeemable into specified goods and/or services with a usage fee. An ecological form of natural money whose unit of value is determined by renewable electricity is described as “green” money. The paper identifies the benefits for governments to facilitate the introduction of green e-money as a supplementary inflation resisting currency to promote financial system integrity, fairness, efficiency, democracy and the sustainability of society.

1 Introduction

The purpose of this paper is to consider the economic, social, political and environmental implications of the emergence of electronic money in various forms and consider the systemic integrity of each type of e-money.

E-money based on four different forms of historical types of currencies is considered. These are: (i) the current form of synthetic or “fiat” money as decreed by governments to be legal tender that can earn interest (ii), fiat money that does not earn interest but has a usage fee (iii) “Free-money” issued privately with a usage fee and (iv) “natural” money redeemable into specified goods and/or services with a usage fee.

Usage fees with natural money limits its life and so are described as “ecological” (Turnbull 2008a,b; 2009b). An ecological form of natural money whose unit of value is determined by renewable electricity is described as “green” money. The paper recommends that governments facilitate the introduction of green e-money as a supplementary inflation resist-
ing currency to promote financial system integrity, fairness, efficiency, democracy and the sustainability of society.

E-money represents a disruptive technology. Before Mervyn King accepted the position of Governor of the Bank of England in 2003 he raised the possibility with others (White 2001) that e-money could result in Central Banks being replaced by “Free Banking” and/or decentralised banking (King 1999: 48). Decentralised banking would introduce profound changes in the power of governments, businesses and the nature of democracy.

Money creates power. So those who seek to exercise power have sought to control the production and management of what can be used as money. Over thousands of year, rulers, dictators, churches, Popes, Sovereigns and bankers have involved themselves in the creation and/or control of money. History records many alliances between the self-interests of bankers, rulers and religious leaders. While the development and spread of democracy has reversed historical practices in exercising power, the development of de-centralised banking controlled by the people for the people has yet to be re-introduced. The democratisation of global communications through the Internet with cell phones transacting e-money has now created a technology for democratising economic power in a way democracy has for political power.

At the end of 2009 there were 4.6 billion cell phone subscribers in a world of 6.7 billion people. Around two thirds of cell phones are in developing countries poorly serviced by landlines and banks. Handsets costing $US13 (The Economist 2009: 6) are now produced with transmission time stored in their Subscriber Identity Module (SIM). These phones possess the facility of sending part of their pre-paid stored transmission time to other cell phones and/or to replenish their stored transmission time from sources of credit on the Internet via the cell phone network provider. In this way cell phone transmission time has become a unit of account in many developing countries that a village store will redeem into goods (The Economist 2009: 3).

Transmission time is metered by phone network work operators who can keep track, store and/or create airtime credits on their computers in same way banks keep track and store and/or create credits of legal tender on their computers. In this way, cell phones introduce “cloud” banking with units of value stored on any computer in the world used by the cell phone network operator and/or by an Internet Service Provider (ISP) accessed by a cell phone subscriber.

Since 2008 a number of governments in developing countries have allowed cell phones to store and distribute their legal tender. The Central Banks in both the Philippines and Bahrain have approved domestic and international transfers directly between cell phones without the need for settlement having to be cleared through their respective banking systems. This step towards a system of decentralised banking from e-money was anticipated by King (1999) who stated “There is no reason, in principle, why final settlements could not be carried out by the private sector without the need for clearing through the central bank.”

In developing countries, cell phones are available that can be used as “swipe” cards to purchase goods and services in the same way debit cards are used today. Competing cell phone companies in developed countries are seeking permission to follow this example. Once

http://reviews.cnet.com/8301-13970_7-10454065-78.html

http://www.nextbillion.net/remittances-mobile-globe-cash

the electronic infrastructure has been established only trivial technical changes are required to introduce privately issued and controlled currencies like fly-buy points or other units of account. In this way, communities around the world are obtaining the facility for introducing competing units of account based on whatever the local community finds convenient to be used. The chosen unit of value may or may not also carry out the other two traditional roles of money to be a store of value and a medium of exchange.

The following Section 2 considers how existing financial arrangements are systemically dysfunctional in providing what Adam Smith described as the “hidden hand” of market forces to allocate resources efficiently. Section 3 details the theory and practice of alternative types of money that has successfully existed and/or competed with official money. The concluding Section 4 considers how market forces introduced by cloud banking could introduce green e-money and considers its implications.

2. Evolution of Money and Banking

This Section describes how the nature of money and banking has radically changed over recent times to introduce inherent flaws in the ability of the financial system to allocate resources efficiently, equitably, democratically or on a sustainable basis.

The starting point is to understand that for thousands of years the only type of money in the world was “natural” money based on real things. As reported by Suhr (1989), “In Ptolomean Egypt, peasants delivered their grain to public storehouses and received certificates of deposit”. The deposit notes were typically scratched on shards of pottery and represented a negotiable property right to specified amount of grain. In this way deposit notes took on the role of money as a store of value and medium of exchange with the quality and quality of grain being the unit of value. However, at redemption of the deposit note into grain deliverable on demand, a storage and maintenance fee was deducted and in some cases also a tax.

Instead of shards of pottery, paper deposit notes acting as IOUs were issued by goldsmiths and bankers in the Middleages to clients who deposited gold with them for safe keeping. Depositors paid a storage fee, rent or demurrage charge that acted like a negative interest rate. The deposit notes represented a title deed to the ownership of a specified amount of gold, silver, copper or in the American colonies – Tobacco (Galbraith 1976: 48). The notes could be used as money but it was money that incurred a fee for its use as in Ptolomean Egypt.

The greed and opportunism of early bankers resulted into practices that today would be both unethical and illegal if carried out by a non-banker. Bankers would accept a deposit of gold to obtain a fee for its safekeeping and issue a deposit note payable to the bearer of the note. The note would circulate as hand-to-hand money as the holder held a property rights to specified amount a gold at the bank. The banker would then create a duplicate deposit note for the same gold to lend to a borrower to earn interest!

By this means the banker had created two property rights to the same unit of “hard” or “specie” currency or “base” money. This duplicity illustrates how banks create money out of nothing even when paper money is redeemable into a natural commodity. If a borrower required specie currency, then the banker became an embezzler when they physically lent out gold deposited with them for safe keeping by a client.

The more loans a bank makes the more interest and profits it makes so there was a compelling incentive for banks to print more and more duplicate notes providing property rights to the same unit of specie currency so as to make more loans. As the bank would only hold a small fraction of the specie currency it had promised to pay to all bearers of its notes, the practice was described a fractional banking. As holding paper notes is more convenient than
holding gold bullion or other types of specie currency the practice became accepted. However, it represents a type of Ponzi scheme as only a fraction of the paper money issued could be redeemed into specie money.

When money created by the banking system earns interest it creates another systemic problem from the need to forever create more money to pay the interest liabilities being generated. It creates a system like a fast growing dog chasing its own tail. It provided one reason for this author to suggest in 1982 that financial system contained the seeds of its own destruction (Turnbull 1989b: 11-19).

The Royal Charter given by the King of England in 1694 to private entrepreneurs to establish the Bank of England made legal the duplicity of banks creating money out of nothing. The duplicity provided a way for the King to obtain silver to finance a war against France without taxing his subjects (Galbraith 1976: 31). The bank issued shares to investors in exchange for silver that the Bank then lent to the King at interest. The King issued non-interest bearing notes promising to pay back the silver to the bank. The Bank lent these notes signed by the King to borrowers to earn interest. In this way the bank obtained interest from both the King and borrowers for the same unit of silver. The promissory notes issued by the King then circulated as hand-to-hand money.

Other banks were also issuing promissory notes redeemable into silver so when the King wanted to borrow more silver he banned other banks issuing competitive notes around London. As the King later required even more silver he extended the monopoly of the Bank of England to issue his notes to all of England. In this way, Bank of England notes became a national monopoly, a practice copied by most other governments around the world to explain how legal tender became monopoly money.

However currency notes typically represent less than 5% of the money supply. Banks making loans create the other 95% or more of the money supply. When banks make loans they simultaneously increase both the liabilities and assets in the banking system. Borrowers provide assets to banks from their promise to pay back the loan that is matched by liabilities of the banking system to provide funds. In this way loans create the deposits for making the loans. Regulators limit the creation of credit by this means so that total liabilities the bank can create does not exceed a specified multiple of the shareholder’s equity. The ratio of equity to total liabilities is described as the capital adequacy ratio. Currently banks are expected to have equity that is not a smaller fraction that around 8% of total liabilities.

A mystery of the banking system is why governments inflict upon themselves the need and cost of borrowing money from bankers when governments have the power to create their own money and not pay interest? The present practice is systemically indefensible. It means that for religious folk, banking has become the biggest confidence trick in the history of civilization.

A second systemically dysfunctional feature is the ability of money to earn interest at a compounding rate for an unlimited time. Fiat money is a social construct that can be created with negligible cost and not based on the existence of any real resource. It becomes an artificial or synthetic asset yet it is given the ability to grow in value without limit and without any human input through accruing interest. This feature is incompatible with establishing any sustainable system.

Proudhon (1840), a contemporary of Karl Marx, argued that money should depreciate over time. He argued that is was not surplus value from production that exploited labour but the unearned value obtained by owners of money through interest payments. Gesell (1916) was inspired by Proudhon and noted that the value of real assets deteriorates overtime. Gesell
proposed that money should have usage cost to make investors neutral to owning real assets or money that at that time was redeemable into gold or silver. The ideas of Gesell inspired many communities to introduce various types of cost carrying or demurrage currencies that are considered in the next section.

The creation of an asset class that does not deteriorate in value over time also means that a bias is created against increasing productivity by investing in “the processes by which society expands its power to make nature yield its resources more abundantly” (Moulton 1935: 10-11). All such processes that increase productivity wear out so there is not a level playing field for investors.

A compelling bias is created for investors to allocate real resources to creating, managing and speculating in synthetic assets and so the growth of the financial system rather than in assets that make society more productive and sustainable. The result is a process described as “financialization” (Palley 2007) by which the size of the financial system increases as percentage of Gross Domestic Product (GDP).

The financial system can be thought of as the oil in an automobile engine that may represent less than 1% of its mass but without it the engine cannot work. However, the overhead cost of the financial system in servicing the real economy as a percentage of GDP continues to grow. Its cost in the US rose from 15.2% in 1979 to 20.4% in 2005 (Palley 2007).

The payment of interest is also indefensible on grounds of equity as it means the rich who own money can get richer without human inputs by lending money to the poor who borrow their money and make the rich richer by paying interest. It is by this means that the World Bank extracts value from poor nations and transfers their income to the rich economies that fund the Bank. Islamic banking that forbids the payment interest avoids this problem. As confirmed by Keynes (1936) “the rate of interest if purely a monetary phenomenon”.

Interest payments can double or even triple the cost of paying off 25-year loans to finance a house, or self-financing infrastructure facilities like water and sewerage works, toll roads and airports. In this way interest inflates the prices charged for public services and/or increases the taxes that need to be imposed. It is systemically contradictory for governments to impose taxes to pay interest on money created by bankers out of thin air that the government could create itself. Any inflationary impact of credit creation by bankers is reduced if instead the government creates the credit so no interest need be charged. This would allow a significant reduction in the prices paid by the public for infrastructure services.

As electricity generated from water, wind, sun and other sustainable sources requires an investment three or more times greater then that of power generated from burning carbon, the associated interests costs are likewise greater to create a heavy bias to burn carbon (Turnbull 2008b). Applying an interest cost to renewable sources of power contributes to what Stern (2006) described in his report on the economic effects of climate change as “The biggest market failure the World has ever seen”.

Another bias in resource allocation arises when diverse economic regions share a common currency as occurs in the European Union or in natural resource rich countries like Australia, Brazil and Canada. Consider a mind experiment that assumes that the consumption of foreign exchange in a region is directly proportional to the population of the region. Let us make two other reasonably realistic assumptions for a country like Australia where: 1. Ten percent of the population live in Western Australia, thus requiring only 10% of Australian foreign exchange and 2. Western Australians earn around 60% of all Australian foreign exchange through the export of their minerals and primary products. This means that on average each
Western Australian is earning six times the foreign exchange they are spending and citizens in the East are earning less than half the foreign exchange they require.

Now if Western Australia established its own currency then its value would be determined by its terms of trade with the rest of the World. The other 90% of Australians residing in the Eastern States are earning only 44% (90%/40%) of the foreign exchange that they require.

The result would be a substantial decline in the value of the Australian dollar used in the Eastern States to create a boom in inbound tourism, education exports and manufacturing while the stronger Western Australia currency would attract migrants from the Eastern States and make imports much cheaper. Other larger exporters in the Eastern States, mainly coal miners and farmers would demand that their regions establish their own non-urban currency to allow them to survive. The history of “faulty feedback to cities” created by a common regional currency over the last thousand years is documented by Jacobs (1985: 156-181).

The mind experiment illustrates just how potent the design of a currency system can be. Currencies can create market forces far more influential than tariffs and taxes in allocating resources. It illustrates why tensions can build up in the European Currency Union. It helps explain the economic success of cities with their own currency like Hong Kong and that of Singapore as a modern manufacturing centre when it become independent of Malaysia in 1965 that was then a major rubber and tin exporter.

Another feature that makes money systemically indefensible is that in its modern form, it has been cast adrift from the discipline of being defined in terms of any specified goods or services. This occurred in 1972 when the US removed the ability of the US dollar to be redeemed into gold. Money that exists as legal tender only by the force of law is describe as “fiat” money. All major currencies are either national monopolies or in the case of the Euro, a trans-national monopoly. When the Euro was created as not being redeemable into any specific commodity, The Economist (1990) described it as “funny money”. Like other fiat currencies it can rightly described as monopoly funny money.

In summary, some of the major systemic indefensible features of the existing monetary regime identified in this section are:

(i) Money is a social construct not definable in terms of anything real,
(ii) There is no basis for interest to be paid for money that is not saved but created out of nothing,
(iii) Prices of real resources are determined without sensitive feedback signals from the environment,
(iv) There is no global unit of value for real resources to be allocated by market forces on a sustainable basis,
(v) There is no inflation resisting global unit of value,
(vi) There may be little basis for resources to be efficiently allocated in diversified economies that share a common currency,
(vii) Governments have delegated to banks to power to create over 95% of money that is a public good to further the profits of private banks,
(viii) Governments raise taxes to pay interest on borrowed money that governments could create themselves to eliminate the need to raise taxes to pay interest,
(ix) More money and credit needs to be continually created to fund the interest payments to private banks generated from their earlier expansion of credit,
(x) The use of money that generates interest charges rather than a carrying costs creates:

(a) A systematic bias for inequality in wealth with the owners of money increasing their income without human inputs,
Special Issue Selected Urbino Contributions

(b) A compelling incentives for the cost of the financial system to grow relative to
the costs in the whole economy;
(c) A substantial bias to burn carbon to generate electricity rather than using in-
vestment intensive renewable resources;
(d) A disincentive is created to own real assets that deteriorate or incur costs to
maintain and/or improve the quality and sustainability of life;
(e) Investment analysis is forced to discount the future value of money and so the
ability of humanity to have a sustainable future.
(f) No basis to justify the reliance on market forces to sustain the existence of hu-
manity on the planet.

The following section considers alternative forms of money that in various degrees over-
come the above systemic indefensible features of the existing monetary regime.

3 Historical examples of cost carrying natural money

This Section review three forms of cost carrying money introduced or proposed during the
Great Depression to supplement official money. At that time official money in Europe had
been an unreliable unit of value and in the US it was in short supply.

The different types of money considered for an e-currency to follow are: (i) privately is-
sued money with a usage fee whose value is based on official money; (ii) government issued
money with a usage fee and (iii) privately issued money with a usage fee redeemable into a
specified commodity. All three examples represented natural money, as legal tender at the
time was typically redeemable into gold or silver. The concluding next section considers
green e-money redeemable into units of kilo-watt-hours (kWh) generated from renewable
energy sources.

Mainstream economic analysis has neglected26 the rapid and widespread emergence dur-
ing the Great Depression in Europe and the US of privately issued “Free-Money” (Gesell
1916). In considering how free markets might organise money, Selgin and White (1994) did
not consider money arising without an interest rate as it has in past eras and also during the
Great Depression when cost carrying notes emerged. The notes very successfully competed
with official money even though they lost all their value if a fee was not periodically incurred.

To answer their question of “How Would the Invisible Hand Handle Money?” Selgin and
White (1994) restricted their invisible hand to only creating three sorts of money: (i) natural
money based on a single commodity, (ii) multiple commodity money and (iii) “no base
money” or fiat money. In addition their analysis implied that any commodity backing a cur-
rency would be traditional hard commodities rather than a service of nature like electricity
generated from renewable sources.

The monetary regimes considered in this paper introduce two elements mostly neglected
in the literature of: (i) cost carrying money and (ii) money defined in terms of a service of
nature that is required to sustain life. Today, energy has become a basic necessity to sustain
life as grain was three thousand years ago. Energy has the advantage that it can be objectively
measured to provide a universal unit of account. However, the value of each unit could vary
from region to region according to its endowment of renewable energy.

26 The literature review of Free Banking (White 1993, Volume I: pp xvii xxii) does not cite
Fisher, Gesell, Keynes, Suhr or any other writers on the theory or practice of cost carrying
money.
One explanation of why cost-carrying money has been neglected by economists is that they may find it difficult to envisage why anybody would accept a form of money that incurred a cost and so could not be used as a long-term store of value. However, as noted above, this type of money had been in use for thousands of years. The point that cost-carrying money does not provide a store value turns out to be an advantage. It simplifies the role of money to just being a unit of value to mediate exchange transactions of other goods and services.

The reasons why and how cost-carrying money was introduced in the Great Depression and quickly spread was documented by leading monetary scholars of the time like Fisher (1933) and Keynes (1936). It is curious why their writings on “Stamp Scrip” (Fisher 1933) that Gesell referred to as “Free-Money” have been overlooked. Especially as contemporary scholars have been considering imposing a cost on international transfers described as a “Tobin Tax” (OECD 2002).

Gesell proposed that money should incur a cost of 0.1% of its face value per week, equivalent to 5.4% per annum. Keynes (1936) thought that this “would be too high in existing conditions, but the correct figure, which would have to be changed from time to time, could only be reached by trial and error”. In practice much higher costs were used. Today the privately issued Chiemgauer currency in Southern Germany is using notes with a cost of 2% per quarter or 8% per year (Gelleri 2009).

Fisher (1933) and Keynes (1936) supported the introduction of Stamped Scrip because among other things it could be used to stabilise prices. Keynes referred to Gesell as “unduly neglected prophet”. In Chapter 23, part VI of his “General Theory” Keynes27 states that Gesell’s 1916 book described, “the establishment of an anti-Marxian socialism” based on “an unfettering of competition instead of its abolition”. Onken (2000) described it as “A Market Economy without Capitalism”.

Keynes (1936: 234) wrote: “The idea behind stamped money is sound” and went on to say:

> Those reformers, who look for a remedy by creating artificial carrying cost for money through the device of requiring legal-tender currency to be periodically stamped at a prescribed cost in order to retain its quality as money, have been on the right track, and the practical value of their proposal deserves consideration

The private issue of cost carrying money in competition with official money was initiated in Germany after the first World War and spread to a number of European countries as documented by Fisher (1933) and Onken (2000). Various levels of cost were introduced from 1% monthly to 2% weekly. However, this type of money spread so quickly and was so successful in reinvigorating local communities in the depth of the Great Depression that it was soon made illegal by governments as it threatened the role of official money and their central banks.

On the reverse side of each currency note there would be spaces for affixing stamps purchased from the issuer of the money to show that payment for the use of the money had been made each week or month as the case may be from the date of issue of the note. In some regions the notes were redeemable into official money and/or the specie currency by which it

---

27 Keynes (1936) stated: “I believe that the future will learn more from the spirit of Gesell than from that of Marx”
was backed on the payment of a redemption fee. The redemption fee was made greater than the cost of affixing a new stamp to keep the note valid and so usable. This meant it was cheaper to keep notes alive then to redeem them. In a number of locations the notes were redeemable into specified goods or even a commodity like coal as used to restart a bankrupt coalmine in the German village of Schwanenkirchen (Fisher 1933: 20).

Cell phone technology now allows stamps to be replaced by direct credits to the issuer of e-money in a similar manner that debits are directly recorded against the owners of credit or debit cards when they make a purchase. It has only been practical to consider the introduction of cost carrying e-money since the roll out of 3G-cell phone technology in around 2004.

A type of stamp scrip widely introduced in the US in 1933 were notes requiring a two cent stamp per dollar value to be affixed each week. Various parties such as the local chamber of commerce, city or local government, would issue the notes. Merchants, their local suppliers and employees would agree to accept the notes that were given away to customers to generate economic activity in the community. Those that did not accept the notes would lose business.28

A widely used form of stamp scrip in the US would loose all its value at midnight each Tuesday unless additional stamps valued at 2% of the face value of the note were affixed to it. The notes were redeemable into official money after one year. By that time the issuer would have sold 52 stamps of two cents each for each one-dollar note on issue. In this way the issuer obtained a profit of 4% of the value of the notes issued as the value of stamps sold for each dollar note would be 52x$0.02=$1.04.

Because of the cost of holding stamp scrip it was used quickly as if you did not use it or stamp it you lost it. Fisher (1933: 14) reports that stamp scrip circulated three or four times faster than official money and for this reason was commonly referred to as “speed money”. Gelleri (2009: 64) reports that the Chiemgauer notes circulate at a similar rate of three times faster than the Euro even though the carrying cost is substantially less than that reported by Fisher.

The use of cost carrying money would result in merchants needing to pay a usage charge of 2% on the value of the scrip in their tills each Tuesday night. However, a 2% charge once a week is far more attractive than paying 2% or more on every credit card transaction during the week. Ironically cost carry money introduces significant savings for both merchants and the economy as it multiples the productivity of money in mediating transactions by a factor of three.

One of the incentives for governments to introduce or enforce legal tender laws was to suppress the success of private sector initiatives in introducing stamp scrip. Instead of banning such initiatives, governments today could consider introducing it to overcome many of the indefensible dysfunctional attributes of the current money system noted in the previous section.

Fisher (1933: 64) describes how the “pump priming” of the US economy in 1932 by the Federal Reserve failed because its approach “was conceived for the producer, not the consumer” (Italics in the original text). He went on to say “this is precisely where Stamp Scrip comes in – to give buying power to the consumer, and supply the compulsion to use it.” Fisher also notes that it discourages “the banks from hoarding cash – ‘to keep liquid’ as they

28 Privately issued IOUs were accepted as money in a similar manner in the then new English colony of Australia during the 18th century before precious metals had been discovered, banks established or the government had imported a printing press (Butlin 1953). Rum also became a popular form of currency.
prefer to express it.” These very same issues arose again 75 years later with the global financial crisis of 2008. This triggered a reappraisal of deep-rooted habits of thinking about money by some commentators. *The Economist* (2009: 74) asked “Will old-fashioned scrip make a comeback” with George Monboit (2009) of *The Guardian* writing: “If the state can't save us, we need a licence to print our own money. It bypasses greedy banks. It recharges local economies. It's time to think seriously about an alternative currency”.

However, many governments made the same mistake in reinflating modern economies after the global financial crisis of 2008 as Fisher described in 1933. Even countries like Australia that gave cash directly to citizens and indirectly through spending programs on schools and other projects to prevent the economy going into a recession could have obtained major benefits from introducing cost-carry money as a supplementary currency (Turnbull 2009a,b,c).

The magic of cost carrying money is that it pays for itself. The 1933 US version became self-liquidating in one year. Any inflationary pressures that might exist from creating more money in a recession or depression is reversed as the money is self-cancelling. More importantly, governments can stimulate their economies without the need for either going into debt or raising taxes. The Bankhead-Pettingell Bill introduced in the US Congress on 17 February 1933 would have achieved this result (Fisher 1933: 79-117). The Bill is as relevant today to stimulate an economy and/or finance universal health care and social security as it was in 1933.

The Bill proposed the issue of one trillion dollars of stamp script as legal tender requiring a stamp of 2% of the face value of each note to be affixed each week and redeemed for official money after one year. The script was to be distributed to each US State in proportion to their population. Half of the script was to be given away to each citizen and the other half used by each State to build infrastructure services.

However, 14 days after the Bill was introduced President Roosevelt announced the New Deal on March 4th that temporarily closed all banks and prohibited the issue of all "emergency currencies". In this way the power and influence of the privately owned Federal Reserve System was protected from competition from both private currencies and the US Post Office. The stamps were to be sold by the Post Office who would have also redeemed the scrip to make a gross profit of $40 billion.

History also reveals that those in control of fiat funny money have protected its monopoly status by banning competing monies, even when the alternative scrip or currencies proved to be highly successful in re-invigorating local economies. Godschalk (2008) states, “real innovations like e-money are still lacking which could be (anonymous) transferable from person to person or new digital ‘numeraires’ (as a new private currency not nominated in State money units like $ or €).” It is these types of e-money that are considered in the concluding next section.

4 Implications of e-money

This section considers the implications of a green type e-money emerging. Over the last ten years numerous scholars have considered the implications on the architecture of the financial system from the introduction of e-money in its existing fiat form (Cronin and Dowd, 2001, Dowd, 1998, Friedman, 2000; Rahn 2000). In considering the implications of e-money King (1999) continued the quote-cited in section one by saying:

> Without such a role in settlements, central banks, in their present form, would no longer exist, nor would money. Financial systems of this kind have been discussed by Black (1970), Fama (1980), Friedman (1999), Hall
The need to limit excessive money creation would be replaced by a concern to ensure the integrity of the computer systems used for settlement purposes. A regulatory body to monitor such systems would be required. ... Central banks may be at the peak of their power. There may well be fewer central banks in the future, and their extinction cannot be ruled out. Societies have managed without central banks in the past. They may well do so again in the future.

Gormez and Budd (2000) support the views of King (1999) that e-money will promote a choice in competing private currencies. Hayek (1976a,b) promoted the idea of competing currencies to control inflation. Gormez and Budd concluded, “the impact and effects of e-money are broad-ranging and far reaching”. They went on to state, “it will increase the efficiency and productivity of the future monetary and financial systems, whether conducted within existing or revised arrangements.”

In considering “revised arrangements”, money that can earn interest or that is not redeemable into specified goods or services is not considered as a competitive option for e-money for the reasons identified in section two. Non-interest earning money in the form of cost-carrying e-money would obtain the support of numerous “invisible hands” of Islamic bankers and traders that could initiate or promote its adoption.

A theoretically attractive form for natural money is one redeemable into a basket of commodities in a ratio that reflects their consumption as included in the analysis by Selgin and White (1994). But patterns of consumption change and are different in different regions. So uncertainty would be introduced from the political processes required in deciding which commodities are included and in what proportions and when and how changes should be made in these parameters.

An analysis of the economic, political and practical advantages of using kWh over gold and other alternatives are presented in Turnbull (2008b). In practice there could be competing alternative types of private e-money. But worldwide concern over climate change could produce an overwhelming number of invisible hands to support the use of green e-dollars redeemable into kWh produced from renewable energy. The introduction of green money would be especially compelling where it provided an alternative to carbon trading or taxing.

The local value of green dollars would be inflation resisting as the cost of production is largely fixed for the 25 year or more life of the generating equipment put in place to convert renewable energy into electricity. The financing of green generators by the issue of pre-payment vouchers to pay for electricity consumed in the future is described in Turnbull (2008b). The vouchers would be redeemable at different dates to pay bills over the life of the green generators to provide an inflation-resisting unit of value. Central banks would no longer be required to maintain the purchasing power of e-money redeemable into pre-payment vouchers. This feature could provide a basis for the most pragmatic invisible hands to prefer green dollars in preference to other types private or official money.

Neither the government nor commercial banks would be required to create credit. Nor would additional green money need to be created to finance the interest cost of creating old money as currently occurs. A sustainable economy becomes feasible (Daly 1977; Kennedy 1989).

Credit would be provided as it is today by suppliers of goods and services. The existence of a local inflation-resisting green unit of value would provide a numeraire for traders and investors to establish the prices of their transactions. Credit required to bridge the payback
period of new investments could be created in a similar manner as used to finance green generators. Alternatively, investment banks could fund new ventures by the issue cost-carrying money that would pay for itself even if the venture failed. Governments could fund public infrastructure projects on a similar basis to eliminate the cost interest. This would reduce the taxes that needed to be raised and/or reduce the price paid by consumers for public services.

The revenues that governments could obtain from that issue cost carrying money are so great that they could be used to fund universal social security and health care. The introduction of green e-money as a supplementary form of legal tender would provide a way to reduce the size and cost of the financial sector of economy and increase the size and cost of the welfare sector. Reversing the process of financialization in this way would make a major contribution in improving economic equity and the quality of life.

A compelling reason for governments to facilitate, if not initiate the introduction of green e-money is to put in place a supplementary financial system to support if not replace the existing dysfunctional system. The excessive debt burden of the richest countries has increased the risk of another systemic failure of the existing system. The existence of private and/or official issued green e-money would provide a systemic economic lifeboat in the event of another financial crisis as well as reducing the need for carbon taxing or trading.

In discussing the economic details for the general introduction of cost-carrying money Suhr (1889: 121) stated, “we can confidently leave most of them to the practitioners who, once they have understood the system, can bring neutral money to life better than monetary theory can”. While there could be major differences in the details of how economic institutions might operate the differences would be less in regards to the social, political and environmental Implications.

Decentralised banking introduced by green e-dollars would allow local communities, towns, cities and governments at local, state and national levels to become self-financing to liberate them from dependency on alien sources of finance as is often the case (Turnbull 2008a). In advanced economies around a third of household income can be exported to alien communities by mortgage and/or rent payments. This indicates the substantial contribution internal financing can contribute to the enrichment of local communities.

Communities would no longer be resource rich and finance poor by economic values being drained out to alien sources of finance. There would be no need for the World Bank and other multi-national or bilateral financial aid agencies (Turnbull 1986, 2001, 2007, 2008a). Agencies may only be required to share the knowledge of how to create and manage community currencies to facilitate self-financing economic activities.

Central banking after all is but a specialised sort of central planning that assumes one set of policy prescriptions are suitable for all regions at the same time. Decentralised banking decentralises economic, social and political power to enrich democratic institutions that may otherwise become captive to financial interests. Various ways in which the institutional arrangements could be established are considered in my other writings (Turnbull 1976: 44–52, 1986; 1992, 2001, 2007).

Green e-money would remove the ten systemic dysfunctional attributes of the existing financial system listed at the end of section one. Green e-money would be a global unit of account but whose value would vary according to the local cost of renewable energy. By eliminating the cost of interest green money would remove the bias created by the current financial system against the use of renewable energy.

In a number of developing countries the existence let alone the state of the local banking system has become irrelevant to the billions of people using cell phones to transact billions of
dollars. There now exist the means for citizens in advanced economies to carry on business if a financial crisis again emerges. This supports the arguments presented above that governments should encourage the spread of e-money.

To sum up the introduction of an ecological form of e-money in the form of green dollars would: (a) provide a stable unit of local value negating the need for Central Banks; (b) provide money not used as a store of value; (c) provide improved equity by reducing unearned income; (d) reverse financialization with real assets becoming more attractive; (e) facilitate steady state economies with a global unit of account but not of value; (f) promote sustainability by reducing the relative cost of finance intensive renewable energy in comparison with energy obtained from burning carbon; (g) facilitate community banking; (h) mitigate the social power of money and (i) enrich democracy. Green e-money provides a basis for establishing a more efficient, equitable and resilient financial system to service and promote a more efficient, equitable, sustainable and democratic real economy not dependent upon continued growth.

5 References


Kennedy, M. (1989), Interest and inflation free money: How to create an exchange medium that works for everyone, Permakultur Institute e.V., West Germany.


Turnbull, S. (1976), The Disadvantages of Australian Firms in Capital Creation, Transnational Corporations Research Project, Faculty of Economics, The University of Sydney.


“Community” – Where to from Here? From “networked individualism” towards “community networks”

Wolfgang Hofkirchner

Bertalanffy Center for the Study of Systems Science, Vienna (www.bertalanffy.org)
Unified Theory of Information Research Group, Vienna (www.uti.at)
Vienna University of Technology, Institute for Design and Technology Assessment

In the sociological literature about strong and weak ties in the context of the Internet there are treatises as well as empirical studies that either suggest techno-optimistic results or endorse cultural pessimistic consequences. The advent of so-called Social Networking proliferates the scientific debate. In 2006 Michele A. Willson published an inquiry into which impacts on society the new information and communication technologies (ICTs) might have. Though she did not make explicit use of system theoretical or cybernetic concepts, it seems easy to reconstruct her argument in a system theoretical or cybernetic perspective. This is what the paper aims at. In doing so, light is shed on the opposition of optimistic and pessimistic evaluations. A new category “community of action” is proposed.

1 Introduction

While one group of authors celebrate recent developments of the Internet labeled the “Social Web” as enabling a relationship between individual and community that does justice to individual self-fulfilment, another group raises the concern that the developments in question might be detrimental to community. A clash of techno-optimism and cultural pessimism? Is there a possibility to reconcile both strands?

Barry Wellman’s notion of the “networked individualism” (2002) with its admitted preponderance on the individual, seems apt to characterise the current development of the so-called “Social Web”. But facing the integration–differentiation dilemma, it does not seem to meet the objectives of those scientists who opt for a revisiting of the term “community” as Michael Gurstein does with his talk of “community networks” (2008).

In 2006 Michele A. Willson published an inquiry into the integration–differentiation dilemma. The result she presents: “As relations are mediated or become more abstracted from concrete embodied interactive forms, … they become thinner and potentially more instrumental, thus undermining the possibilities and spaces for mutuality” (p. 86).

She argues in the following manner: “The processes of abstraction, rationalization, and the extension and compression of time and space that are instituted through the ways in which techno-society uses these technologies potentially lead to the increased individuation and compartmentalization of the individual from her/his immediate social surroundings, and also to changes in the nature and form of many relationships.” (pp. 220-221) ”The processes of abstraction, extension/compression, and rationalization … are not unique processes linked
inextricably to the use of technology – they are enacted throughout all areas of contemporary Western life. However, … technology epitomizes and accentuates such processes – being both an outcome of and an instrument for their enactment.” (p.225)

Though she does not make explicit use of system theoretical or cybernetic concepts, it seems easy to reconstruct her argument in a system theoretical or cybernetic perspective. By the same token, a position is sought on which techno-optimistic as well as cultural pessimism might find common ground.

The notion of “community” shall be clarified as a system theoretical concept (section 2). The impact of the new Web tools on the formation of communities shall be reviewed by resorting to findings and arguments in Wellman 2002, Benkler 2006, Bruns 2008, Sunstein 2006, Lovink 2007, Gurstein 2008 as well as Willson 2006 (section 3). Willson’s assumption of an overlay of the form of postmodern community over the modern form over the traditional form – by which the predominant form is considered as influencing the others – shall be endorsed and a kind of progression by cumulation will be posited (section 4). In contradistinction to “communities of practice” and “communities of interest”, a concept of “communities of action” shall be formed to denote true communities that strive for solving the integration–differentiation dilemma by the application of the system theoretical principle of unity-through-diversity and bounce back from the virtual to the real (section 5).

2 “Community” as a system theoretical concept

Though often remarked that networks are entities consisting of one or more nodes connected by one or more ties that altogether manifest emergent structures or properties that are more than the sum of the ties and nodes, this definition holds rather for complex systems in which a hierarchy of macro- and micro-levels is supposed to exist. But it is doubtful whether it is applicable to networks, since network analysis seems to miss an instrument to deal with levels, which is more than dealing with mere modules alone (Albert-László Barabási 2003). Networks are in essence supposed to be flat.

Communities, then, are better dealt with a complex systems approach. As Paul Morris (1996, p. 226) comments: “One plus one plus one plus one plus one just never seem to add up to more than a number!” Communities can be characterised by identity, commonality, reciprocity, connectivity (see Michele A. Willson 2006) – each term can be interpreted as expressing an emergent property of the whole and being in need of the level of a third that goes beyond the singular existence of a one and its immediate linking to another one to be understandable as a new quality in its own right. Charles Taylor (1995) sees the point when writing: “Something is common when it exists not just for me and for you, but for us, acknowledged as such” (p. 139). Suffice to mention here that this logic of complex systems was preceded by the logic of Firstness, Secondness, and Thirdness of Charles Sanders Peirce (e.g., 2000). (This logical figure seems to have much in common with a recently formulated Logic In Reality that does away with the axiom of the excluded middle but posits an axiom of the included middle, instead (see Joseph Brenner 2008 which goes back to Basarab Nicolescu and Stéphane Lupasco)).

I utilise a concept of different categories of information processes going on in social life and being technically supported by information and communication technologies (ICTs). These are cognitive, communicative, and cooperative processes. This concept is based upon complex systems thinking.

Cognitive processes (in the broad sense of the term, thus including emotional and motivational ones) are individual, or in case of any supraindividual social agency named a sub-
ject, intrasubjective, processes of generating information. Human Computer Interaction as
discipline deals with how human cognition is being supported and influenced by using ICTs.

- Communicative processes are interactive, that is, among individuals or other social
subjects. They are information generation processes due to the coupling of cognitive subjects.
Computer Mediated Communication is about these processes, primarily, in between humans,
when supported by ICTs.

- Cooperative processes are integrative, concern the supraindividual level and let inform-
ation emerge from synergetic effects of communicating subjects. Originally, this topic was
researched by Computer Supported Cooperative Work from the perspective of the involve-
ment of ICTs. Nowadays, this approach takes advantage from research in collective intelli-
gence, wisdom of the crowds, and so on.

From these definitions follows that cognition is the necessary condition for communica-
tion and communication the necessary condition for cooperation. In addition, I assume that if
one level serves the function of a necessary condition for the next higher level then the lower
level might be influenced, shaped, adjusted according to this function in a feedback way by
the higher level.

The advantage to cast community as a system-theoretical term becomes evident when
Web-based communities are the focus. Technological systems like computers, the Internet,
ICTs, are social systems. With the notion of “technosocial system” the idea of socio-
techn(ological)ical systems from the Tavistock Institute to Günter Ropohl (1979, 1999) is applied
to the object in question. While appreciating every social science approach that acknowledges
the social nature of technology, the notion of “socio-techn(ological)ical systems” might be mis-
leading in that it seems to imply that there are techn(ological)ical systems which form one cate-
gory and that there are socio-techn(ological)ical ones which form a subcategory of the former. It
is rather the other way around. Technological systems are a subcategory of social systems.
Therefore I am inclined to coin the term “technosocial systems”. That is, technology is an
inherently social phenomenon. Technology does not make sense unless embedded in the so-
cial context which animates it. Each technological infrastructure has to be kept at work by
human support, has to be maintained, restored, repaired, reproduced, adapted, modified, im-
proved, and so on, which only human society is capable of doing. This means that every tech-
nology belongs to the technological infrastructure of a society, or the technosphere, that can-
not in a meaningful way be defined without reference to humans. The technosphere itself is a
social system with actors at the microlevel and technology at the macrolevel. The actors are
humans both in their social role as producers and as users of technology. Producing (devising
and constructing) and using technology is the self-organisational dynamic of such a technoso-
cial system.

Thus ICTs are not grasped satisfactorily when defined in a technologically restricted way.
An information system includes not only technological devices but the community of its pro-
ducers and users. It is humans that are connected via the connection of computers and it is
humans that are the driving force behind new applications. It is precisely in the case of the
Internet and, later, the Web that the important role of humans in technology became clear:
there is a trend towards the convergence of producers and consumers that gave way to the
notion of “prosumers”; the consumers of the Internet are the users, they have become the pro-
ducers as Howard Rheingold showed in his books (e.g. Rheingold, 1993). So it has become
common to talk about “produsers” of the Web (Bruns 2008).

Employed to the Web, in particular, to the so-called “Social Web”, the categorisation of
cognitive, communicative and cooperative functions yields a distinction of affordances the
Web is able to offer. Jan Schmidt (2008, pp. 23-24) worked out the following performances
“Information Management” which means the search for, retrieval of, and administrating of relevant information through usage of blogs, wikis, tagging. This refers to the category of cognition.

“Identity Management”, as Schmidt says, or “Self Management”, which means the presentation of selected personal features like interests, opinions, knowledge through usage of blogs, podcasts, videocasts. This refers to the category of communication.

“Relationship Management” which means, mainly through the use of platforms, the maintenance of existing social relations and the establishing of new social relations as well as opting-outs. This refers to the category of cooperation.

Given these definitions of information processes categories and assignments of web affordances, where are the processes of networking and community building to be located? Since communication may lead to cooperation but need not to do so and cooperation is an emergent level above communication, community building seems to suit the requirements of a cooperative process best, while networking might occur already on the interactive, communicative level. But, as is the case with the talk about networking, communities are said to be found on the adjacent level too and the leap between communication and cooperation is thereby blurred. This distinction is, however, decisive in order to understand the development of Internet and Web and the possibilities of achieving a new quality of the state of societal formation.

3 Community building between optimistic and pessimistic views

Let’s review some recent literature findings concerning the appearance of properties of communities and networks in the Web.

Barry Wellman (2002) though talking of communities seems to fail the USP of communities when defining them as being “far-flung, loosely-bounded, sparsely-knit and fragmentary” (p. 11), whether real or virtual, in contradistinction to “hierarchically arranged, densely knit, bounded groups” (p. 10) – the so-called “little boxes” – from where the age of glocalisation has been departing. With computer-mediated communication he foresees the rise of “networked individualism”. A survey he did found that the more people are online, the less is their sense of belonging to an online community (Wellman et al. 2001). Thus networked individualism means free choice of social circles, possibilities for the development of strategies or tactics for the self-advancement, weak loyalties, a sense of being an autonomous individual, and the preponderance of the individual status not the social structure.

When addressing the eutopian and distopian views regarding the development of the Net, that is, the view of virtual communities to revitalise human communal existence and the view of physical communities being supplanted rather than being supplemented, Yochai Benkler (2006) uses the distinction between strong ties and weak ties, introduced by Mark Granovetter, to summarise empirical studies on ICTs strengthening or fragmentig social relations as follows: strong ties which relate to family and local communities were not weakened but rather strengthened by the use of ICTs and new weak ties were created in addition (see chapter 10). These new weak ties have established what is known by the terms “communities of practice” and “communities of interest” and are instrumental for the individual but not in the way that they are to become the dominant mode of connecting to other people. However, Benkler seems to see an exception from this rule: the emergence of social software and peer-production like with F/OSS or Wikipedia make the group more important than the individual;
they go beyond a community of mere interest in that they “allow the relationship to thicken over time” (p. 375).

In line with the trend throughout economy towards the “prosumer” highlighted by Toffler, Axel Bruns (2008) coined the word “produser” to underscore the change that has taken place in the principles on which enthusiastic communities like the ones mentioned above, but also in citizen journalism as to blogs and others, are more and more based.

Also Cass R. Sunstein who deliberates over how many minds can produce knowledge and avoid failures arrives at a rather positive evaluation of F/OSS and Wikipedia. The success story of F/OSS is due to the following factors: “Many people are willing and able to contribute, sometimes with the prospect of economic reward, sometimes without any such prospect. It is often easy to see whether proposed changes are good ones. For open source projects, filters are put in place to protect against errors. The problems associated with deliberation can be reduced because we are often dealing with eureka-type problems, where deliberation works well. Open source projects typically combine deliberation with access to widely dispersed information and creativity” (p. 195). And Wikipedia “provides an exceptional opportunity to aggregate the information held by many minds. Wikipedia itself offers a series of deliberative forums in which disagreements can be explored” (p. 195). Contrary to F/OSS and Wikipedia, the blogosphere “offers a stunningly diverse range of claims, perspectives, rants, insights, lies, facts, falsehood, sense, and nonsense” (p. 187). Sunstein lists some positive examples but they seem to be outbalanced by negative ones because the blogosphere “runs into the usual pitfalls that undermine deliberation, sometimes in heightened forms” (p. xiv).

Geert Lovink (2007) who sets out to theorise the Internet culture is critical of the blogosphere to an even greater extent. According to the data he finds, blogs are used primarily as instruments for managing one’s self, for marketing one’s self, for making R. for one’s self. Therefore he doubts that blogs belong to groupware or social software. They are rather the follow-up generation of the homepage. He quotes from a blog that writers don’t care about whether or not a community forms as result of the writing. Blogging, he says, is competing for a maximum of attention. And, we can add, this is true not only for the blogosphere. Here the similarity to the sphere of so-called social software platforms like Facebook are striking: what counts is being linked. Lovink criticises the superficiality of content. In many cases existing information is only reproduced, he bemoans, instead of creating a new one. At the same time he admits that blogging, annotating and building links could be a start for defeating the indifference. Together with Ned Rossiter he opts for “organised networks” that are useful in strategic contexts that transcend tactical ones. “Networked multitudes create temporary and voluntary forms of collaboration that transcend but do not necessary disrupt the Age of Disengagement” (2005, no page number). In organised networks he seems to realise the ideal of free cooperation in which the result outperforms the sum of individual performances.

Michael Gurstein, the father of Community Informatics, is eager to distinguish between networks and communities. While networks are “structured around the relationships of autonomous and self-directed individual actors (or nodes) where the basic structuring is of individuals (nodes) interacting with other individuals (nodes) with linkages between nodes being based on individual choice”, communities “assume collectivity or communality within a shared framework which may include common values, norms, rules of behaviour, goals and so on” (2008, p. 16). He refers to Barry Wellman’s notion of “networked individualism” the meaning of which he puts on a level with the meaning of the “Facebook society”. He interprets Wellman’s networks as externally driven ones that combine fragmented individuals and contrasts it with “self-initiated (self-organized) and participatory networks which inter-link individuals not on the basis of fragments of identity but on the basis of self-initiated and self-
realized identities. These networks function as “communities” (whether based on physical or virtual connections) through which action may be undertaken, projects realized, reality confronted and modified” (p. 20). He goes on stating, “These communities provide a basis or a foundation element for the construction of an alternative reality” (p. 20). Community Informatics then is the way to “provide the means for communities to be enabled and empowered and to effect action in the world” (p. 21).

In her book “Technically Together” (2006), Michele A. Willson raises like Lovink the concern that “the quality of much of the communication that takes place through technology is questionable” (p. 157). “As relations are mediated or become more abstracted from concrete embodied interactive forms, … they become thinner and potentially more instrumental, thus undermining the possibilities and spaces for mutuality” (p. 86). That’s the reason why “postmodern communities” in which “the primary form of interaction and communication is disembodied – detached from presence and mediated through technology” (p. 39) are prone to being objectified as means for individual ends according to Habermas’s “instrumental rationality”. “Radical”, that is, mutualistic, intersubjectivity tends to become outweighed by instrumental relations that either project the Ego onto the Other or reduce the Other to an object (see pp. 99-103). It is not technology as such that would predetermine this social outcome but “the manner in which technology is utilized, the purposes to which it is applied, and the processes that are enacted through such utilization” (p. 225) that make the difference. Hence her criticism of the network euphoria (p. 58).

4 Evolution or devolution of communities?

That empirical investigation yields ambiguous results does not come as a surprise. ICTs bear the potential of fostering participation, democracy, community, but this potential is realised only marginally and turned into the opposite, given the preponderance of partial interests.

Manuel Castells describes this situation as follows (2006, p. 20):

“In this early 21st century we are at the crossroads of the development of the network society. We are witnessing an increasing contradiction between current social relationships of production and the potential expansion of formidable productive forces. This may be the only lasting contribution from the classical Marxist theory. The human potential embedded in new communication and genetic technologies, in networking, in the new forms of social organization and cultural invention, is truly extraordinary. Yet, existing social systems stall the dynamics of creativity […] Accepting democracy of communication is accepting direct democracy, something no state has accepted in history. Accepting a debate to redefine property rights goes to the heart of the legitimacy of capitalism. Accepting that the users are the producers of technology challenges the power of the expert.”

Willson provides us with the following taxonomy of communities:

- traditional communities “as communities of place where choice of membership does not exist” (p. 36);
- modern communities “as being communities of choice (or alternatively, as Gesellschaft)” (p. 37);
- postmodern communities “as extending the degree of choice available to participants in both traditional and modern communities” “through freedom from embodied or geographical identity” “and an increase in the possibilities of multiple community memberships” (p. 37).
The traditional form of community is organised around face-to-face communication, the modern form around extended communication traversing geographical space, and the postmodern form around technology-mediated communication (pp. 39-41).

While some authors argue the more choice the better for the individual and the more progress has been made in the development of society, Willson sees a trend towards ever thinner ties or bonds between humans. There is a concentration on particular interests and less commitment – “people can move in and out of communities whenever they desire” (p. 41). But Willson’s motivation is to place the focus “on finding ways to realize more radical relations within and between our various forms of community” (p. 215).

She does not assert that modern communities replace traditional ones and that postmodern ones replace modern ones. They coexist as she says. However, “There may be a social dominance of one particular form of community during any historical period” (p. 43).

This her argument is well supported by what I call a Critical Social Systems view (see Hofkirchner 2007, see also Hofkirchner 2006) which, in turn, is based upon Evolutionary Systems thinking. Besides, I will show how this form of sociocybernetics goes hand in hand with a proper assessment of current tendencies in social development and with a proper orientation for the design of future social systems.

The core of evolutionary systems theory is a stage model. It is a phase model and a layer model in one. The stage model of evolutionary systems is based upon the principle of emergentism and the principle of asymmetrism. Emergence takes place in transitions in which by the interaction of proto-elements systems are produced. Asymmetry describes the suprasystem hierarchies in which subsystems are encapsulated.

The shift from one phase to a subsequent phase is tantamount to a shift onto a new layer. The new system includes this additional layer. It encapsulates what previously were autonomous systems as subsystems and shapes them to reflect the dominance relation. However, the newly formed system will always depend on the functioning of its subsystems. When they cease to support the system, it will break down.

In that way, evolutionary systems theory resembles dialectical thinking as to “sublation” (“Aufhebung”) in Hegel’s sense. The first connotation of sublation which is to break, to cancel, to nullify, that is, to discontinue, is reflected in the stage model by the point that marks the end of a certain stage of evolution. The second connotation which is to keep, to save, to preserve, to store, that is, to continue, comes to the fore when the scheme concedes that each new layer is built upon a preceding one and that the new stage comprises not only the new layer but parts of the old one. The third connotation which is to raise, to lift, that is, to leap in quality, is depicted by the notion of the higher level that exerts downward causation onto the lower ones.

Evolutionary systems theory, thus based upon dialectical philosophy, sketches the framework of social self-organisation in a critical theory of social systems. Being critical can be ascribed to this theoretical framework in that it is normative while doing justice to the factual at the same time. For it includes not only an account of the potential that is given with the actual but also an evaluation of the potential which sorts out the desired. Thus this theory embraces an ascendance from the potential given now to the actual to be established in the future as well as an ascendance from the less good now to the better then which altogether yields the Not-Yet in critical theorist Ernst Bloch’s sense (see e.g. Bloch 1967). These processes aimed at the Not-Yet are at the core of the dynamic of social self-organisation. By the notion of the Not-Yet Bloch tried to salvage the idea of utopia – it is not any longer a nowhere deprived of
the possibility to get there but a future that can be glimpsed and anticipated in what is already possible here and now.

After Bloch, hope is legitimised. The future of societal affairs is open, that is, it is both a risk and a chance, a threat and an opportunity, unless humans intervene.

Human intervention has to reconcile the possible and the desirable and establish a unity of both. There are three ways of intervention resp. Non-intervention that fail to establish this unity (see Table 1).

<table>
<thead>
<tr>
<th>Activism</th>
<th>Practicism</th>
<th>Illusion of omnipotence</th>
<th>Belief in progress</th>
<th>Every possible is desirable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utopianism,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romanticism</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passivism</td>
<td></td>
<td>Illusion of impotence</td>
<td>Possible and desirable don't match</td>
<td></td>
</tr>
<tr>
<td>Deliberate activism</td>
<td></td>
<td>Acknowledgement of limited controllability</td>
<td>The possible and the desirable have to be reconciliated</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Sublating the optimistic and the pessimistic view

Two of them are based on the idea that everything can be controlled. This, however, is an illusion. Either it comes as belief in progress or it comes as wishful thinking. The first, called practicism reduces the desirable to everything that is possible. The second, either utopianism, if directed towards the future, or romanticism, if directed towards the past, projects the desirable onto the possible. The third way is a form of non-intervention. It is based on another illusion – the illusion of impotence – and contends the assertion that the possible and the desirable cannot be made to match. It is only the acknowledgement of the limits of control as the fourth way of a so-called deliberate activism that is capable of undertaking the task of bringing the possible and the desirable together.

That systems theory incorporates values does not come as a surprise when looking back to the forerunner of evolutionary systems thinking, the General System Theory of Ludwig von Bertalanffy who took a normative stance. System theory, in his opinion, had to be based upon humanism (see Hofkirchner 2005).

5 “Communities of action”

Taking these positions and findings into account, I want to draw the following conclusions regarding the three levels of information management, identity management, and relationship management which are the manifestations of Web-based cognitive, communicative, and cooperative processes:

In the category of information management it is up to the individual in her role as receiver to navigate through the sea of sense and nonsense and find out information relevant to her. In that context, the wisdom of the crowds gives weight to that information that is already weighty (Schmidt 2008, p. 33).
In the role of an emitter of information, the individual is keen on using the Web as an appropriate tool for its identity management with the preponderance of self-presentation instead of entering in true dialogues.

And as to relationship management, it can be stated that “individual freedom” tends to involve a feeling of decreased responsibility, obligation, or commitment to the Other or to the society/community (Willson 2006, pp. 156-157) which makes the usage of the term “community” questionable for the depiction of virtual or postmodern communities.

On the one hand, the usage of terms like “social software”, “social media”, “social networking” aimed at characterising the so-called “Web 2.0” as “Social Web” seems to typify euphemistic ideology because the meaning of “social” is blurring the distinction between the interaction of actors and the relationships that emerge from these interactions and exert a kind of dominance over these interactions, in turn. In most cases, applications reduce to the lower level of interaction only. “Web 2.0” shares with “Web 1.0” being instrumental for the competition in the attention economy. Thus it lays emphasis on individuals or individual organisations being cognised and recognised by other individuals or individual organisations. What makes it distinct from “Web 1.0” is an increase in interaction facilitated by new technological applications. However, interaction between them is functional for gaining attention, thus communication serves cognition instead of the other way round, let alone communication serving cooperation. Bearing in mind that “communities” are entities belonging to the supra-individual level, so-called “communities of practice” or “communities of interest” in which individual actors gather to pursue some practice – without need to share some interest – or to pursue some personal interest is instrumental to the individual actors only and do not qualify for the label of “community”. They represent weak ties that need not thicken among individual actors networked this way. Social networks reside on the interactive level but not on the integrative level. Barry Wellman’s networked individualism seems the predominant characteristic of “Web 2.0”.

Thus, by and large, “networked” individuals, in particular, the young, who are, in fact, excluded from fully participating in the economic disposal over resources, in the political decision-making process and in the cultural definition of what is (a) good are engaged with the struggle for recognition in a diversity of networks. This struggle is the compensation for, and the alienated form of, the struggle for full participation in the network society from which they are precluded. They liken – as the Japanese painter Korehiko Hino portrays the “child-zombies” of the information society (Sennhauser 2009) – personas, masks, faces devoid of facing the other because devoid of radical relations between the individuals (I owe thanks for getting this idea and the knowledge of the work of Korehiko Hino to Eric Mührel).

On the other hand, there are, in the virtual space, examples of “communities of action” as I propose to term true communities existing in today’s reality – Wikipedia which is cooperation for producing a world repository of knowledge, F/OSS which is cooperation for producing software for the world, and there is a minor faction of blogs devoted to cooperation in that they want to help bring about a new way of thinking as underpinning for political action in global society. From a sociological, technosocial-systems point of view, these undertakings in peer production – though some of them as to the technologies used even date back to the time before “Web 2.0” – prove the possibility of transcending networked individualism and realize “networked communities” or “community networks”, as Gurstein puts it. But they are yet islands of an alternative reality, pointing to the level of cooperation, albeit under the prevalence of the communicative and cognitive restraints of networked individualism. They might become spearheads of a transition to a “Web 3.0” enabling and empowering communities such that a reorganisation of today’s societies into a Global Sustainable Information Society.
can be envisaged. They might turn out as anticipations of a future development after this development happened to come true. So far they manifest what is possible today and desirable for tomorrow too.

Thus I want to conclude: in principle, the Web, as the Internet at all, by virtue of its technical affordance, has the potential for transforming societies into networked communities or community networks thereby advancing from the cognitive and communicative levels of information generation towards the cooperative level. Taking on a historical perspective, this would mean that ICT can serve as remedy for the exaggerated individualism the evolution of society has manifested since the departure from originary, “natural” communities (Gemeinschaft) though itself is still suffering from the predominant, individualistic mode of socialisation.

References:


Cibercultur@ as an Interdisciplinary activity in Research and Local Communities. Advances in an Information / Communication / Knowledge computer system development

José A. Amozurrutia
LabCOMplex
in Centro de Investigaciones Interdisciplinarias en Ciencias y Humanidades CEIICH at Universidad Nacional Autónoma de México UNAM, México.

Abstract: True interdisciplinary is a non trivial activity because it implies a dialectic interaction between two or more heterogeneous perspectives. The big challenge begins with the necessity to take into the analysis of a real problem a solution of two or more opposed and complementary approaches from different disciplines. Challenge is even greater with the definition of one and the same object of study and establishing a sharable methodology approach. Interdisciplinary emerges as the resolution of this challenges.

In order to research around this situation, we at Labcomplex –Development and Research in Complex Communication Laboratory- are working on an interdisciplinary strategy that crosses different procedures and processes in transversal way. We call Cibercultur@ -in a tight coupling with Sociocybernetics- to the art of steering the interdisciplinary activity derived from an Information, Communication AND Knowledge cultures dialectically developed and conjugated in “real-life” problems identified by a research community and/or by what we propose to call a local knowledge community.

In this paper –related in a tie connection with other LabCOMplex’s papers, I will describe the construction process of an “Information / communication / research” computer system oriented to develop Cibercultur@ in a current action-research project. The objective of this project is to construct autonomous knowledge communities able to solve in a better way their own social problems. The community is coupled and interacts with a research group from the same region. In this way, Cibercultur@ -we believe- is in line with a second version of Modernity. The case study in the paper involves a local community in a central region in México (Charcas, San Luis Potosí) and their relation with an emergent research group located in the capital city of the same State, both located in the Northern area of México. General exposure plan is in the next figure.

29 I want to thank Patricia Almaguer-Kalixto for her helpful support checking the English grammar and other comments about the text.
1. Introduction: cibercultur@, interdisciplinarity and Sociocybernetics

Most real problems deal with actual technologies. Information systems must be known and in many cases should be used to organize information, to share it and in the best cases to construct new perspectives to make reflections over already stated information in order to improve problem solutions. Communication based on Internet services is substantial due to the increased interchange and interactions of activities, documents and conversations between research and decision groups through electronic format. This new processes require reflecting on the challenges that establish the translation and code relations challenges inside synchronization activities that may affect profoundly their purposes and products. Integration and differentiation operations derived from digital devices as mediated tools in the core of knowledge processes are always a challenge for power management and political decisions.

With all these implications on real life activity, the situation in small communities placed apart from big cities in México is critical even the availability of technology. They suppose to have connected computers on Internet and enough information systems to solve some of their problems. The point is that they do not have the conditions to change or modify the basic pieces in the tools that let make adaptations or new conceptions to solve problems. But they have creativity and in many case the disposition to learn new ways of doing things. They must know that they have potentialities to develop knowledge and creative ways to find better solutions to their problems. They must realize it is possible to be informed, communicated and to share their experiences and problems with similar communities not only in their country but around the world. Many more forms of knowledge are possible for them.

In order to investigate around this situation, we at Labcomplex – Research and Development in Complex Communication Laboratory- are working on an interdisciplinary strategy that crosses many procedures and processes in several disciplines in a transversal way. We call Cibercultur@\textsuperscript{30} -in a tight conceptual coupling with Sociocybernetics\textsuperscript{31} - to the art of

\textsuperscript{30} As first approach, we defined Cybercultur@ starting with the root “Cyber” that from the Greek “Kyber” refers to the conductor or governor of a boat. He, as it leads a crew to a specific target, faces the complexities of permanent environment. The meaning which we took from “culture” comes from the art to nourish. The “arroba
steering the interdisciplinary activity derived from an Information, Communication AND Knowledge considered as tree cultures dialectically conjugated and immersed in real life problems. It is a conjugation activity that may be solved by a group of researchers and/or by a group of members within a community.

Cibercultur@ is not only referred in terms of system construction but as system thinking and matrix organization. It does not depend only computers but with them it possible to be used as a platform of knowledge development. Simulation and creative representation forms is the core of the information / communication / knowledge systems construction in order to make better questions to real problems and to create new alternatives to a better decision making.

Cibercultur@ is enriched with the Sociocybernetic approach in several ways. First of all, Cibercultur@ takes the environment as the essential analysis component always coupled with the system / community / group itself. Second order reflection is substantial in all cibercultur@l processes. An information system construction –also considered as technological development- is build in accordance to reflective activity development and is always coupled to “communication / knowledge” activities in any research processes. Communication is the essential social operation within activities always immersed in the information / knowledge on social interactions. Construction process at the same time is enriched with Piaget / García’s Epistemology and interdisciplinary approaches. As already mentioned, Cibercultur@ is an ongoing research project at LabCOMplex and is enriched with the theoretical and practical approaches of Jorge A. González and Margarita Maass, Javier Maisterrena, Patricia Almaguer and Laura González all of them members of RC51 group.

2. Information / Communication / Research system approach in KC@

Cibercultur@ is not only possible with computers. It may be developed in any real situation in which paper, pencil and a group of people exist in a common problem situation. As diverse and heterogeneous is the group so its richness and potentiality to solve problems. Of course there should be present the basic principles of Cibercultur@ to be applied and which are always derived from actions: from the way the group organizes their classroom tools, chairs and worktables and this includes the way everybody listen to others and speaks to the group. Cibercultur@ finally grows with the use of common tools and concepts linked through reflexivity in order to understand better the environment and problem in hand.

But development of Cibercultur@ is richer if we use system thinking and computers i.e. two components that make it an intelligent tool to increase reflection and generate creative outputs oriented to problem solving. The whole Cibercultur@ system conception in an Emergent Community of Research is integrated by the conjunction of Information, Communication and Knowledge processes.

- @- “shape is a kind of symbol that represents positive feedback interaction that separates the system from the homeostatic processes and leads - by means of processes of feedback and recursivity- to new courses of the implied processes, to expand thresholds of the system. Cibercultur@ refers then the art to always cultivate in a collective way the orientation processes of learning the conduction of systems in complex environments.

31 I will refer to four basic references on Sociocybernetics (Geyer,1995) ,(Hornung, 2006) , ( Scott, 2006) and (González, 2003).

32 The paper by Margarita Maass –from LabCOMplex- presented in this Conference is centered on this activity.

33 The paper by Laura González –from LabCOMplex- presented in this Conference is centered on this activity.

34 An Emergent Community of Research is the result of an affective and rational interaction between the members of a group always learning and promoting creativity around a research project.
tion and Knowledge culture subsystems which are represented as three intersected domines. Their conjugation may be thought as the inter-definition of three main activities or modules in an intelligent agent i.e input-output, process and general organization. These three components may be though analogue with the three main cultures (See figure 1).

In this figure we have emphasized the integration of the main activities –as subsystems-derived in the three cultures in Cibercultur@:

- Communication culture based in Input-output activities in which the main purpose is to translate information between two or more codes. Translation may also be thought as an assimilation process based on distinctions, valuations, measurements, comparisons and accommodations between environments structured domines and system structuring domines, a kind of structural coupling.

- Information culture based in organizations activities in which the main purpose is to establish new relations between observables / data to make second order relations i.e. in data bases or to rearrange selected previous data. New relations based on structure data types without redundancy and consistency are information activities based again on distinctions, valuations, measurements, comparisons and accommodations in a data base coupled with input-output and process modules.

- Knowledge culture based in differentiation and integration activities in which their main purpose is to make system reflections, anticipations and generalizations related to communication activities and second order organizations related to self organization system activities. New differentiation and integration activities based on intense reflexivity may also be related to second order forms of “assimilation / accommodation” process with a more elaborated distinctions, valuations, measurements, comparisons and strongly tied to organizations of system information and with its structural coupling with the environment.

35 Considering Maturana’s terminology –we propose they tend to be Structurally Coupled, Operationally Closed and Self organized as subsystems (Amozurrutia, 2006, 2007)
As we can observe Cibercultur@ implies no information activities without communication and knowledge activities if we think them as integrated within a system organization model. By similar criteria there is no communication without information and knowledge and there is no knowledge without communication and information activities. Conjugation of these three cultures considered as a sum of epistemological activities is a kind of discipline convergence thinking transversal to most problem analysis. It is an essential component of Cibercultur@ strategy.

3. System organization in Cibercultur@

Cibercultur@ systems are theoretically conceptualized as three concentrically subsystems around any problem: The contextual subsystem that frames the problem in the research project administration and methodological strategy; the theoretic subsystem that frames the problem within the epistemic context and conceptual definitions, and the empirical subsystem that frames the problem within data / observables, variables and parameters (see figure 2). All three subsystems are the Cibercultur@ “Information/ organization” component and should be actualized permanently as the system memory in order to enrich group reflexivity.

Given the heterogeneous quality i.e. use of different logical, emotional and axiological codes, and distant location of members in a Cibercultur@ Community, virtual communication is essential in group activities. The use of Distance Educational Network (MR) software is an excellent tool to develop complex communication sessions. Research activities conjugated with communication tied to information systems enrich group reflexivity and research techniques. These techniques are oriented to qualitative analysis approach and are closely related with the empirical information subsystem. All subsystems constitute an integral system of an Emergence Community Research.

---

36 Although information subsystems should be information’s sub-subsystems we are going to maintain their identification in terms of information subsystems.

37 DEN refers to Distance Educational Network a software platform directed by Raúl Santamarina . http://www.dednet.org/flashSite/index.php

38 Some experiences we have had are analyzed in (Amozurrutia, 2008)
4. Case Study in Emergent Communities of Research and Knowledge

“Research and Development of Emergent Community of local Knowledge in México” is a LabCOMplex project. One of its main objectives is to the construction of Emergent Communities oriented to enhance potential degrees of self organization against the technological vector incidence on their symbolic ecologies. Emergence refers to the appearance of new relations between people interactions that promote group communication, reflexivity and intelligence in order to solve their own problems. Emergent Communities of Local Knowledge are oriented to solve real practical problems in their habitat and social space in which Cibercultur@ is applied. Emergent Communities of Research has a Cibercultur@l background which is applied to any social problem.

In the first phase of our research project we formed diverse groups whose main objective has been first of all to be a group of persons interested in making a community. Within the activities is to construct an information system and the formation of virtual network to establish collaboration between their own necessities around their projects of interest. Groups range from young people at high school in small towns in Mexico to teachers, researchers and advance student groups at University. In all cases Cibercultur@l concept approach was taken as a theoretical base and in each case we have had different levels of vital knowledge centered in information systems and communication based in their network construction.

As said before in some cases the central objective was directed toward a common social problem of the Community, i.e. Emergent Communities of local Knowledge. In other cases the objective was centered in individual or group research projects i.e. thesis, research projects at the University or in their own institution, i.e. Emergent Communities of Research. The main challenge in both cases was to maintain alive and active their virtual network communication and to keep interested in the group under their own initiatives in order to promote degrees of self-catalyzing and self-organization. This objective is still in research development and we may say we are still far from get it. We need better strategies to attain communities to achieve their own initiatives. Next figure (3) shows the relations between Labcomplex, Research and Local Knowledge Communities gestation and network construction.

![Diagram of Emergent Communities](Image)

The ideal profile in the Emergent Communities of Local Knowledge require a Coordinator which should be strongly related with the group and connected with the social actors in

---

39 “Cibercultur@ y Sociocibernética. Ideas para una reflexión conjunta en paralelo” (González, 2007)
his/her city. Close to his/her performance a Systemic Thinking individual needs to be engaged for the system development and virtual communications connectivity. Finally it is desirable to have inside the group a social researcher that promote permanently a second order reflexivity based in her/his Action research participation strategy.

Today, within a second phase of our project, the attention is centered in two main objectives: to understand and design new strategies in Cibercultur@ development as a theoretical research project and to find better ways to transmit the basic desire and reflexivity to an Emergent Community of Research coupled with one or more Emergent Communities of local Knowledge. From here it is possible to reproduce the Cibercultur@l model in new Communities in order to build a network between Research and Local Knowledge Emergent Communities. On 2007 we started two new Emergent Communities of local Knowledge in the central region of “San Luis Potosi” State, and last year we started with an Emergent Community of Research in the city of San Luis Potosi.

The community of research at San Luis Potosi has already between five to eight researchers, from under graduated students to Doctors in Sociology, Communication, Systems and Anthropology areas. The Emergent Community of local Knowledge is a small city named “Charcas” and is formed by young people. Its central objective is the construction of their own history i.e. family mining tradition and care of goats. They also pay attention to several critical situations in the youth population.

We know that the relation between Labcomplex, as an Emergent Community of Research with new Emergent Communities of Research linked to Emergent Communities of local Knowledge should be woven in a different way. One of our main objectives today is to investigate on how to research Cibercultur@l development itself in those communities and how to promote their own auto-organization and auto-catalyzed processes. Linked to these objectives is the construction of an Information / Communication / Knowledge System development strategy, which is described in the next sections.

5. Constructing the Information System for the Emergent Community of Research in San Luis Potosi

Besides the main objectives of the research project, one of our interest in the domain of Cibercultur@l knowledge is understanding the distinction between knowledge construction and knowledge development. In the first case there must be an evidence of several epistemic operations inside the researcher such as new assimilations, anticipations and inferences (Piaget,1997, 2000), and transformations and new mechanisms (Garcia, 2000,2006) in order to trace evidence of knowledge construction; in the second case there should be only general differentiation and integration processes –based on epistemic operations- that enlarge or adequuate their internal structures and processes to develop a new forms of associations in processes already established. Following this theoretical distinction, by analogy we may call Information System construction and not Information System development when there is transformation in the knowledge structures and processes in a research community. As I will further discuss, we have seen assimilation and accommodation processes inside structures of San Luis Potosi group research activity.

One important component on the San Luis Potosí research project was the construction of an Information system in the context of the research process. The initial idea considered two types of information: a source of documents around historical, sociological, cultural, commercial and political themes about the region (contextual). Secondly, a universe of observables from the present Oral and Documental History information such as diaries, memory albums, family photographs, recorded descriptions and so on observables derivate from empirical re-
search in fieldwork. Theoretical information i.e. as the variables and categorical definitions, may be seen as a structural component in database systems. Following this criteria we propose two Information Systems, one for the register of documental sources collected from Libraries and other to register the observables from oral history.

The theoretical component of these information systems are based on three main structural categories given in the perspectives in the left part of figure 4. They are the Cibercultur@ Macro perspective (3a in the figure), the source documents meso-perspective (3b) and Oral History micro perspective (3c).

The meso perspective is constituted with the project documents and the source general information documents. Both are considered as the environment information of the project and the context information project respectively. This perspective is oriented to trace the project history and to delimitate the main documents to explore and to identify them as source information of reference for the macro and micro perspectives. Some of the categories are mentioned in “3b” of figure 4. The micro perspective is constituted with the transcriptions and paragraph extracts from Documents and observables i.e. ethnographies form places, photos and diaries or contents analysis from interviews transcriptions.

The macro perspective (3a in figure 4) is oriented to identify and select those distinctions that determine the correspondence between codes and basic functions as well as the relationship and correspondences between structures and processes in the domains of development and construction of information, communication and knowledge.

The combination of two macro-categories along a timeline and within a limited space domain will show us the evolution or the structure and processes transformations on several dimensions. That is the case of coordinated actions evolution at the social level of interest, or the transformations of data matrix organization at specific institution or the knowledge development at symbolic level of a social group. The interaction of the micro, meso and macro categories is represented in a map of trajectories. These elements might constitute an important contribution to the reflexive relations to the Research Community –see figure 5.
Today, the Emergent Community of Research at San Luis Potosi is in the middle way of Cibercultur@l approach. Project and source document database Information System construction is the actual activity. We have started the second phase in which San Luis Potosi research group is developing their own strategies in order to establish relations with an emergent group interested in develop local knowledge in a neighbor city. In order to support and enrich such process, in May 2009 the LabCOMplex group organized the Fourth National Cibercultur@ Meeting in San Luis Potosi City centered in the theoretical fields of “oral history and social representations”.

One of the main activities in between the technical sessions between Labcomplex and the research group in San Luis was the discussion of information systems structure and approach to establish general criteria to structure and develop new databases contents. In the next subsections we describe the main aspects around the Project and source document database Information System used by the Research Community in San Luis Potosi.

- Categorical evolution in Source documents and objects

The main document database Information System structure is based on two tables. The first one registers the general *meso* units of analysis i.e. documents and groups of objects, facts or events. The second table registers the contents or parts of the general units of analysis. In the case of Source Documents, the second table registers two or more citations, notes or comments related to one Document. In the case of group of photos registration, the first table contains the identification and general characteristics of a package of photos and the second table register the contents, characteristics and name of each photo. A third table registers the researchers identification for the information required in consolidation process. Figure shows the main components of first system.

---

Although this database could be organized in several tables, we propose a general format for one single table and an identifier field related to the general units of analysis to make distinctions between types of information.

The strategy to consolidate databases of community members is based on the copy-paste process between personal oriented systems which are specifically programmed for this purpose. Each register in the two main tables has its own identification key field. Auxiliary tables with alternative options in categories have a unique identification them should be always in consistence and in a tie communication and information activity. This strategy lets community members to understand better database structures relations and reinforces their culture organization development. In a letter phase of the project, the community selects the software to construct their own systems. Generally is open software for web page constructions.
The main discussions on relation to the design of this tables has been around the definition of Periods, Spatial Scale approach, Themes and Areas of interest of each document. Figure 7 is shows moments of the structure transformation of categories.

From the Cibercultur@l point of interest, the structure transformation is relevant because it shows dynamic characteristics related to Emergent Community research activity. The same approach will be done later on analyzing the structure transformation in the Cibercultur@l matrix. Discussion and reflexivity around those topics let a better understanding of the Information Subsystem structure and let them to be part of a horizontality approach research community. All subsystems are programmed in spreadsheet software so most of researchers may understand not only the basic data base concepts involved but the implications on system structure actualization process (see note 9 above).

- Evolution of Representational Forms
Evolution of Representational Forms in System development is essential in the understanding the Research Community. The basic format for document consulting is shown in figure 8. This form started with four hyperlink bottoms to other parts of the system to more than fifteen new bottoms. We have to keep in mind that the system design and coding is an essential component of the Cibercultur@l process. As has been said before, it is constructed in spreadsheet software so the group knowledge in the Research Community should learn and understand well enough the informatics in order to transmit and develop it in the Local Knowledge Communities Systems.

The same process takes place in other forms of observable representations. There are two main types of representations, synchronically (tables of concentrates and pies and bars graph) and diachronically in trajectory maps. Figure 9 show a table of frequencies of twelve combinations of source document variables.

Figure 10 shows the trajectories of one period of source documentations table. The application of this representation between the three levels of information macro from the Cibercultur@l matrix, meso from the Document information and micro from the Oral History analysis conjugates the Cibercultur@l perspective on a social problem analysis (micro level) and the context and environment information (meso and macro analysis). The algorithm associated
with these maps is not trivial in spreadsheet language, so there must be a special attention with the Information culture development at the Research Community in order not only to understand but to transform to new possibilities.

The analysis of structure transformations and epistemic operations involved in the Research Community activity itself is again an essential analysis activity in the Cibercultur@l object of study. This level of specialization in computer programming required in the Information Culture Development has been an important reflexive theme because it is a cause of undesired dependencies with Labcomplex. In the last period of the second phase development of Emergent Community of Research at San Luis Potosi City we have pay attention to this challenge and in next section we synthesize part of the transformation process in researchers.

- Construction or Development of Knowledge

In order to distinguish between Knowledge Development and Knowledge Construction, it is necessary to discuss its differences from a Cibercultur@l perspective. In our consideration, Cibercultur@ approach let individuals and communities construct a different level of observation to solve their social problems. This is a kind of amalgam of concepts that integrate elements of cybernetic and epistemic cultures within open listening attitudes into the other disciplines knowledge. However, a recurrent idea ignores the difference between several types of development i.e. unions, additions and integrations in the same domine or extrapolations and interpolations in the Cibercultur@l processes. Instead there are hard epistemic operations and constructions as integrations from different natures and distinctions in the core of homogenous domines that requires a new observation to understand and reconstruct. The challenge in expanding code limits creating new valuations and reconstruct space-time dimensions leads to different observation reflections and new theoretical explanations which are not only developments.

Aware of these challenges, we are inquiring about knowledge transformation in the research communities at San Luis Potosi. For that purpose we are designing and applying several techniques to understand the nature of changes of observations perspectives which also implies a second order observation of ourselves. In this paper I will summarize a basic survey application with open answers about System development in that Research Community.

Main categorical structure in the survey design was based on Information, Communication and Knowledge cultures qualities we have proposed. Each one is composed with two subcategories, the first deals with the relevance of essential concepts associated with the systemic
point of view and the second is related with specific questions that confirm the knowledge i.e. theoretical and practical issues around the concepts. Most of the questions were done with respect to the systems described in the case study. Each subcategory has one to three variables, so the whole survey has twenty questions and eight categories. See figure 11.

![Diagram](image)

Figure 11: Main categorical structure in the survey

Each answer was analyzed and evaluated on a “factor valuation matrix” which establishes a normalized value between zero and one. The valuation table is shown in figure 12. As you can see matrix is not symmetrical, the upper left part has greater values then the lower right. It is because we gave a greater weight to the theoretical and practical dimension than the relevance dimension. Integration of variables and categories was done weighting valuation factors. The method and System tool to get the results may be consulted in (Amozurrutia, 2007).

![Valuation Matrix](image)

Figure 12: Factor valuation matrix for variables

We apply the survey to the San Luis Research Community and also to two more researchers in order to have a contrasting reference in their answers. In figure 13 we may appreciate the valuations of four people of San Luis Research Community with different disciplines: Informatics, Sociology, Anthropology and Communication. We present also the valuations of two researchers (both from Communication area) all ready trained in Cibercultur@ but not in the San Luis trajectory development. As we have seen frequently, professionals from Informatics or System disciplines understand quite well the relevance of their discipline in the Social Sciences research. A different situation is shown in the social disciplines about their system thinking knowledge. In this case, the sociologist “A” have had the desirable knowledge in Cibercultur@. It is not the case of the anthropologist and the Communicator “A” from San Luis Group that seems to have less knowledge in some of the Cibercultur@l system valuations. The case of Sociologist “B” and Communicator “B” give us the difference with respect.
to the active and motivated researchers at San Luis Community. They have had a high degree of Cibercultur@ knowledge and practice in the system training – Sociologist “B-”, but recognize their limitations in their system knowledge - Communicator “B”-. We may say that the generality of the professionals in the Social Sciences disciplines in our country will not be able to answer even one or two of the variables.

An amplification of two of the main categories (figure 14) can tell us not only the desirable equilibrium in the group Cibercultur@l knowledge but the relevance they have paid to the system thinking in the group. These two categories tell us about the relevance of systemic activities developed in the project by the expert in Informatics and one Sociologist.

The applications we have shown in the previous sections of this paper are not trivial in the spreadsheet software literature. They are even less understood by traditional Social Science professionals and in our country they pay much less attention to the rational hard informatics domine. In both cases, social researchers at San Luis have given extra hours to understand the system construction proposed and we have asked them to implemented similar systems strategy in order to make the computer programs for the case of Charcas Local Knowledge Community, which has to be different than the one used in the Research Community.

At present the research group is living the experience of not being complete supported by Labcomplex group. They are in the phase to develop a self-organization activities and activities oriented to conform Charcas Community. I believe that in the moment to face the chal-
lenges to design the strategies to the new problems and social situations, the group will transform their own criteria to design and apply the strategies they know about Cibercultur@ and it will be the opportunity for them to expand their capacity not only in system thinking but in problem solving in terms of conjugation of Information / Communication / Knowledge culture.

As we have done all ready, Labcomplex and San Luis Research groups have had sessions in which the physical organization strategy is oriented to promote group interactions and develop second order reflections around a research subject. We pay special attention to people reactions, dialogues and environment perturbations to look for epistemic mechanisms, operations and processes. With this elements and relations is possible to reorganize and reconstruct information about the presence of assimilations, generalizations and inferences in the session and to interchange reflections about the knowledge process in terms of differentiations, integrations and re-equilibration processes.

6. Some conclusions

I have made a rough synthesis of one research process that has been done by LabCOM-plex group. The attention was centered in the organization and transformation of main concepts and categories from the systemic perspective in Cibercultur@. We pay special attention to the integration of the three main areas i.e. Information, Communication and Knowledge. The System model in figure 1 integrates Cibercultur@ as an Intelligent Agent. In that frame we organized several components of research activities in terms of subsystems synthesized in figure 2. We presented the main components and challenges in conforming Emergent Communities of local Knowledge and Emergent Communities of Research and a Case Study of the latter. We made some reflections on their system construction and research activities. These activities are immersed most of the time in interdisciplinary approach promoting System Thinking and Epistemic considerations with a Cibercultural perspective inside Sociological, Anthropological and Communicational professional trajectories that meet to address a research problem. From this perspective we believe Cibercultur@ is in line with a second version of Modernity, an approach oriented to re-construct our social reality, stepping away from any relativism and reductionism. We think that second order observation is always the perspective to construct reality i.e observing systems observing, but not through any way, and from any reductionisms but through knowledge construction through a dialectical approach.

Finally, I presented a first part of a qualitative research analysis around epistemological and development in San Luis Research Community. The initial results let us advice the possibility to construct some epistemic changes as individuals and as a group by means of System Thinking development and Cibercultur@ conjugation process. But at the same case, we at Labcomplex keep on investigating, how to research construction and/or development of knowledge in Emergent Communities in order to participate in a better understanding of Complexity in Mexican Society.

7. References


Scott B., (2003), Cibernética de segundo orden: una introducción histórica. En Sociocibernética, lineamientos de un paradigma. Compilado por Marcuello Servós CH. Zaragoza, España. Institución ‘Fernando el Católico’
E-Social Science from a Systems Perspective: Applying the SACS Toolkit

Brian Castellani
Department of Sociology
Kent State University, Ashtabula
Ashtabula OH 44004
Phone: (430) 964-4331
Fax: (440) 964-4269
E-mail: bcastel3@kent.edu

Frederic Hafferty
Department of Behavioral Sciences
University of Minnesota, School of Medicine, Duluth
Minnesota (MN), USA

Michael Ball
Computer Services, Kent State University at Ashtabula
Ohio USA.

ABSTRACT

Many digital databases housed on the web today are organized in ways that are problematic for systems researchers, primarily because they are prearranged for conventional, reductionistic, linear, statistically-aggregated research. To make use of such data, systems researchers need an intermediary, e-scientific framework that can translate their digital data into a “systems-oriented” format, so that this data can be modeled and analyzed from a complex systems perspective. We have designed just such an intermediary framework, called the SACS Toolkit. The SACS Toolkit helps systems researchers translate and use digital data trapped in non-useful formats through its unique systems-based ontology and methodology. In the current article, we demonstrate the utility of the SACS Toolkit by applying it to a digital case study: a web-based, community health science database we are currently researching. We begin our article with a bit of background, including a review of e-social science and, more specifically, the SACS Toolkit. Next, we provide a brief description of our digital case study and the challenges it presented us; followed by an explanation of how we used the SACS Toolkit to solve our challenges. We end with a summary of how other systems researchers working with digital data may find the SACS Toolkit useful.
INTRODUCTION

This paper demonstrates how scholars can use web-based, digital data to conduct research from a complex systems perspective by employing a new e-scientific method for modeling social systems, called the SACS Toolkit. Our paper is organized as follows. We begin with a bit of background, exploring the new field of e-social science and its more important terms: digital data, ontology, cyberinfrastructure. Next we turn to a brief overview of the SACS Toolkit. Third, we discuss our digital case study—a web-based, community health science database we are researching—and the challenges it presented; followed by an explanation of how we used the SACS Toolkit to solve these challenges. We end with a summary of how other systems researchers working with web-based, digital data may find the SACS Toolkit useful.

Statement of the Problem

Digital data—housed on the internet, web or other forms of cyberinfrastructure—are everywhere. In fact, our worlds are awash in electronic data (Hine 2006). And yet, this data are not so easily collected or analyzed by systems researchers. Why? The problem is that most digital data are not organized or available in a format that is readily useable for complex systems modeling or analysis (Hine 2006). Instead, most data is arranged to conduct conventional, reductionistic, linear, statistically-aggregated research (Abbott 2001).

The gap between web-based, digital data and systems research constitutes the type of challenge e-social science was created to address. The challenge is to create intermediary tools that systems researchers can employ to collect, analyze and model digital data (Castellani and Hafferty 2009).

One such intermediary tool is the Sociology and Complexity Science (SACS) Toolkit (Castellani and Hafferty 2009). The SACS Toolkit provides researchers a new systems-based ontology and methodology for collecting, organizing, analyzing and modeling digital data, in particular the large, multi-dimensional databases regularly encountered on the web today. The SACS Toolkit does this by functioning as an intermediary between the web and researcher. Its intermediary function provides researchers two major advantages.

In terms of ontology, the SACS Toolkit provides a systems-based filing system (social complexity theory) that helps researchers convert and organize digital databases in a theoretically meaningful manner. The filing system is designed also to form a complex system—to match the complexity of most web-based data.

In terms of method, the SACS Toolkit provides a novel algorithm (assemblage) researchers can use to model complex systems with web-based, digital data. The assemblage algorithm works with any type of digital data; and can be used with most methodological techniques (e.g., field research, statistics, etc), including the latest advances in agent-based modeling, network analysis, e-science and web science. Before we explore further the SACS Toolkit, we need to tour briefly the field of e-science.

E-Science: A Brief Overview

E-science is a new area of study (emerging in the late 1990s) that seeks to develop and employ the latest advances in cyberinfrastructure to help scholars make the most of doing research in a digital world (Hine 2006). John Taylor, who coined the term, specifically defines e-science as: “global collaboration in key areas of science and the next generation of infrastructure that will enable it” (www.e-science.clrc.ac.uk/). Examples of e-science abound, from providing researchers and industry access to distributed computer systems to techniques for visualizing scholarly citation networks to virtual communities where research-
ers can share and work on databases together. One of the leading programs in e-science is the UK e-Science Programme (www.rcuk.ac.uk/escience/default.htm).

A subfield of e-science is called e-social science. Its purpose is to use cyber-infrastructure to develop social scientific inquiry in the digital age (Borgman 2007). One of the leading centers is the National Centre for e-Social Science (www.esrcsocietytoday.ac.uk/ESRCInfoCentre/index.aspx). As Paul Tennent explains, e-social science performs an intermediary function (www.ncess.ac.uk/events/conference/programme/fri/3dtennent.pdf). Its goal is to act as a go-between, interpreter, integrator, liaison, conciliator and link between the fields of social and computer/information science. Such a role is not easy. It requires more than social scientists using computers, the grid, cyberinfrastructure or computational thinking. And, it requires more than computer scientists making new tools for social scientist to use. Instead, it requires a role that is more ontological and translational, involving itself in the iterative process of connecting data, computers and people in efficient and effective ways that promote (rather than hinder) scientific knowledge and innovation.

The intermediary work of the e-social scientist revolves around four main interconnected areas: digital data, cyberinfrastructure, ontology and method.

**Digital Data**: Work on digital data has to do with issues of size and complexity. When scholars use the term digital data (or any of its synonyms, such as web-based data, digital databases, or grid-data), they are referring to the databases typically encountered on the web, internet or grid. The defining feature of digital databases are their complexity: they are most often comprised of a large number of cases, factors, relationships, levels of analysis, types of data, and are often collected across time; and, in some cases, real time, as with economic data. It is also often the case that this data are located on different servers, in different formats, and tend to require different methods of retrieval. Finally, and very important to our paper, when digital databases are created, they are typically assembled according to an ontological system of classification or organization that is not always user-friendly for social scientists conducting research (Borgman 2007). By user-friendly we mean that the data is not in a format that promotes or facilitates data collection, management, analysis or modeling.

**Cyberinfrastructure**: Work on cyberinfrastructure has to do with what, how and where digital data is housed (Hine 2006). Cyberinfrastructure (and its related terms, such as the grid) refers to any and all research environments designed to support advanced data acquisition, storage, management, integration, mining, visualization and other computing and information processing services over the Internet or web (Borgman 2007). For an excellent overview, visit the National Science Foundation’s Cyberinfrastructure Vision for 21st Century Discovery (www.nsf.gov/pubs/2007/nsf0728/index.jsp). Concerns related to cyberinfrastructure include such questions as: Are data accessible to the right people, institutions, etc? Are data in the right format? Are data sufficiently compatible for multiple methods of analysis, etc? And, can servers, markup and script languages and search engines interface with one another, etc?

**Ontology**: The third area of e-social scientific work, which is strongly tied to issues of data and cyberinfrastructure, is ontology (www.shirky.com/writings/ontology_overrated.html). Ontology concerns itself with the underlying conceptual framework upon which digital databases and their supporting cyberinfrastructure are organized. Information science employs ontology in a very distinct way; one that does not match with the traditional philosophical usage of this term. In philosophy, ontology refers to first principles and the nature of being and Being. One thinks, for example, of Heidegger, Husserl, Sartre and phenomenology in this first and most traditional sense of the term. Information science uses ontology to mean something altogether different (http://en.wikipedia.org/wiki/Ontology_(computer_science) ).
For information science, ontology refers to the underlying conceptual framework upon which an information system is grounded, including: (1) what things belong within the domain of an information system (i.e., parts, groups, components, catalogues, classification schemes, servers, databases, storage retrieval mechanisms, computers, software, etc) and (2) what relationships exist amongst these things. The guiding question of ontology is: When considering the development or usage of some database and supporting cyberinfrastructure, what kind of framework or classification system will ensure that scholars, computers and data are connected in the most efficient and effective manner?“

Digital Ontology: The specific type of ontology we address in this paper is digital ontology. Digital ontology (a term we have coined) refers to any electronic classification scheme used to determine what set of things belong to a particular information system and the relationships that exist amongst those things. Examples of digital ontology abound. They include: (1) online catalogues, such as WorldCat; (2) search engines, such as Google and Yahoo; (3) cross-platform markup languages, such as HTML; (4) scripting languages, such as JavaScript; and (5) the numerous techniques from the burgeoning field of e-social science—which includes Access Grid, Map Tube, etc. (For more examples, see the National e-Science Centre www.nesc.ac.uk/index.html.)

Methodology: The final area of e-social science is method. In terms of methodological innovation, the focus of e-social scientists is the same as scholars in the fields of complexity science and data mining: the focus is to develop the computationally-based tools social scientists need to study the massive, multi-dimensional, multi-platform, complex databases regularly housed and analyzed on the web today.

And why are such tools needed? They are needed because the conventional methods of social science, both qualitative and statistical, were not designed for digital inquiry (Abbott 2000, p. 98). Statistics, for example, unnecessarily reduces the complexity of digital data through its employment of a linear, nomothetic approach to research—identify one or three important social factors and examine their linear impact on some set of dependent variables. As Abbott explains, such an approach is “useless for large-scale pattern-recognition” (2000, p. 298). Therefore, argues Abbott, social scientists “are going to have to jettison the idea of causality that has led us to denigrate precisely the analytic tools necessary to address the problems of huge data sets” (2000, pp. 298-299). And it is not just a matter of “ramping up” statistics to fix the problem. New tools are needed. The same is true of qualitative method, which has done almost nothing to develop innovative ways of analyzing digital data or large databases, numerical or otherwise (Castellani, Castellani and Spray 2002).

E-social scientists have their work cut out for them, particularly when it comes to training social scientists to use these tools. At present, little has changed in the way undergraduates and graduates in the social sciences are taught method. Courses focus on statistics, augmented (maybe) with qualitative inquiry. Little is really offered in advanced modeling, let alone computational modeling—and forget about offering courses that seek to move past the horribly boring yet oddly entrenched divide between qualitative method and statistics. Of the four areas of work in which e-social scientists are involved, this last one presents the greatest challenge.

THE SACS TOOLKIT

While e-social science has made many important advances in the few short years during which it has existed, much remains to be done. One particular area is the development of intermediary toolkits that systems researchers—be they in sociocybernetics, social systems theory, or complexity science—can use to model complex social systems with digital data. Serv-
ing such a function is one of the reasons we created the SACS Toolkit (Castellani and Hafferty 2009).

The SACS Toolkit is a new framework for modeling complex social systems. SACS stands for sociology and complexity science. The SACS Toolkit is part of the burgeoning literature in complexity science and e-social science (See Castellani and Hafferty 2009).

The SACS Toolkit was created, in part, to address the increasing theoretical and methodological struggles associated with digital data; in particular, the massive, multidimensional, complex data and databases typically found on the web. The SACS Toolkit can handle digital data because of its unique, systems-based, ontological and methodological organization. In what follows, we explore the ontological and methodological strengths of the SACS Toolkit for using, organizing and analyzing digital data. A caveat, however, is in order. Given the focus of our paper, we cannot provide a comprehensive or thoroughgoing review of the SACS Toolkit. A complete review is found in Sociology and Complexity Science: A New Field of Inquiry (Castellani and Hafferty 2009).

The Working Parts of the SACS Toolkit

The SACS Toolkit is comprised of three basic parts:

1. A systems-based, ontological and theoretical framework (including related vocabulary) researchers can use to organize their analysis of digital data. This framework is called social complexity theory.

2. A theoretically and ontologically grounded algorithm, called assemblage, which researchers can use to analyze and assemble, from the “ground up,” a working model of a social system using web-based data. Assemblage is highly visual, relying upon a rather extensive repertoire of techniques taken from social network analysis, the new science of networks, social simulation, fractal geometry, cluster analysis, grounded theory, and the self-organizing map literature. Integrating these techniques, the SACS Toolkit provides a novel approach to visualizing social systems.

3. A recommended toolset of techniques and methods for modeling with digital data. While the SACS Toolkit can be used with just about any sociological method or technique, our work finds the following techniques indispensible when it comes to analyzing digital data: cluster analysis, neural networking (specifically, the self-organizing map), social network analysis, grounded theory method, Foucault’s genealogical method, fractal geometry, chaos theory, computational modeling, and data mining.

Social Complexity Theory

As shown in Figure 1 (see below), social complexity theory is an ontological and conceptual framework for modeling complex systems using various types of data—in particular, web-based, digital data. As a framework, social complexity theory is less interested in explaining things and more interested in providing researchers an effective way to organize, coordinate, categorize, sort, connect, link and manage their data. It does this by providing researchers a theoretical filing system and an associated vocabulary that they can use to create their own model of a social system. Social complexity theory’s user-driven filing system is comprised of five organizational folders. In terms of ontology, the most important is the first, the field of relations.
Field of Relations:

As shown in Figure 1 above, the field of relations is the intellectual arrangement and bracketing of all information necessary to construct a model of a complex social system. We borrow the term from Michel Foucault (Dreyfus & Rabinow 1983). For us, this term has three ontological functions: conceptual, organizational and methodological.

1. Conceptually, the field of relations functions as the grid of analysis (Dreyfus & Rabinow, 1983, pp 118-125). Its purpose is to articulate the domain in which all the elements of a social system of study, and their relationships, can be located and coaxed into coming together. What makes the field of relations unique in terms of e-science is that it is highly flexible and user-driven. The field of relations is flexible because it changes according to the topic of study; and it is user-driven because the researcher defines what the domain of relations will be, what to include within it and what relationships are the most important.
The user-driven nature of the field of relations is very important. The SACS Toolkit’s utility comes from its ability to act as a supra-ontological framework, which can be placed upon any existing framework found on the web. As such, regardless of the databases, servers, data formats being used, the researcher has a guiding ontological framework that helps to organize, analyze and model some topic of study in complex systems terms.

2. In terms of digital data, the second ontological purpose of the field of relations is organizational. Social complexity theory is a rigorous framework of classification. Social complexity theory provides a way for researchers to make sense of the chaos of digital data, which it does by giving the researcher a set of conceptual folders, sub-folders, a filing system, and so forth for organizing everything in a set of predetermined format—see Figure 1.

3. The third ontological purpose of the field of relations is methodological. The strength of using the field of relations is that it can be directly applied to the management of one’s database, as well as the analysis of empirical data. This is of particular importance when working with digital data because there is no loss of information as the researcher moves from theory to data collection to analysis.

The Other Four Folders:

As shown in Figure 1, what makes social complexity theory so rigorous and yet flexible when it comes to organizing digital data is that its filing system is designed to form a complex social system. Said more specifically, the four major folders within the field of relations—(1) the web of subsystems, (2) the network of attracting clusters, (3) environment, and (4) system dynamics—represent each of the major domains of a complex social system. In turn, each of these folders is comprised of their own sub-folders and files. Furthermore, this system of folders comes with a corresponding vocabulary, including such concepts as attractor points, negotiated ordering, system trajectory, social practice, emergence, and self-organization (Castellani and Hafferty 2009). By using this filing system and vocabulary, researchers can empirically investigate the structure and dynamics of a complex social system, confident that they have an effective way to manage their data and their study, as it develops over time.

Assemblage:

Assemblage is a case-based, system-clustering algorithm for modeling social systems. It is built on the organizational framework of social complexity theory and represents the procedural component of the SACS Toolkit. As shown in Figure 2 below, the goal of assemblage is to move researchers through a six-step algorithm for constructing a model of some social system of study. This algorithm roughly proceeds as follows:

STEP 1: Help the researcher define a set of research questions in systems terms.

STEPS 2-4: Establish the social system’s field of relations and begin to “file and fill-in” the information for all of the major folders (web of social practices, network of attracting clusters, etc). Examine the internal structure and dynamics of the model for a particular moment in time-space—a snapshot of the model, if you will—including its interactions with key environmental forces and its trajectory within key environmental systems. Assemble these discrete, cross-sectional snapshots of the system into a moving model, providing some overall sense of the system as a whole.

STEPS 5-6: Once done, researchers can “data mine” this model to answer the initial study questions or to generate new questions or models.
The Uniqueness of Assemblage:

As a set of procedures, assemblage has seven key features which, when combined, make it unique amongst e-social science and complexity science methods. This is not to say that some of the features of assemblage (such as its case-based approach to analysis) are not found in other methods and techniques. However, it is to say that no other method has all seven features. We will briefly review these features here. See Castellani and Hafferty (2009) for more information.

1. Assemblage was designed to address the unique challenges associated with modeling complex social systems.

2. Assemblage is ontologically grounded in social complexity theory. Few methods in e-social science or complexity science come with their own systems-based ontology. Assemblage does.

3. Assemblage has no data preference. Unlike the majority of e-social science or complexity science methods, which tend to focus on numerical data, assemblage works equally well with any and all data types—from numerical to visual to historical.

4. Assemblage works with just about any statistical, qualitative, historical or computational technique. As such, it works with (rather than against) the existing repertoire of a researcher, rather than unnecessarily pushing the researcher into new techniques. This is an important point because, to date, the methods of e-social science and complexity science are, for the most part, computationally based. The reason assemblage can be used with such a wide variety of tools and toolsets is because these tools do not drive the model building process. Instead, the six-step algorithm of assemblage, along with the theoretical framework upon which it is grounded, drives model building. Any tool can be used as long as the researcher uses it in service of modeling a social system.

5. Assemblage employs a case-based, constant comparative approach to modeling complex social systems. Following Ragin (2008) and colleagues (e.g., Ragin and Byrne 2009), we find that the best way to preserve the complexity of any system of study and to make sense of this complexity at the same time is to adopt a case-based approach to analysis.

A case-based, constant comparative approach to digital data treats a social system as a set of cases, each of which represents one of the multiple ways that a complex social system is practiced by the agents of which it is comprised. An easy example: in a political system, the various values of its agents will couple together to form different political parties (e.g., conservative, moderate, liberal, etc). These political parties will, in turn, have their own coupled divisions: liberal conservatives, moderate conservatives, etc.

From the perspective of social complexity theory, a case represents each and every way a complex system of study can be practiced. In other words, a case represents one example, expression, instance or illustration of a social system of study. A “case-based” approach is useful because it allow us to build a social system from the ground-up, by exploring and comparing cases, one or several at a time, to profile and catalogue the various ways that a web of social practices is expressed. Once this process is complete, the researcher is ready to move to the next major step in the assemblage process.

6. Assemblage is a data-compressing, system-clustering method. The ultimate goal of assemblage is to help the researcher cluster the social system into its key attractor points. In this way—and here we draw directly from Kohonen (2001) and his self-organizing map technique— assemblage is a data reduction technique. Assemblage tries to reduce and compress the complexity of a social system into a simpler and more understandable form. The product
of this simplifying process is the network of attracting clusters. As shown in Figure 1, the network of attracting clusters looks like a typical network, except it is organized around the dominant ways a system in practiced—otherwise known as the system’s attracting clusters. Once this network of attracting clusters has been created, it is then reconstructed over a series of discrete moments in time-space and put together to create a moving picture of the system’s dynamics, along with its trajectories within various environmental systems. If greater detail is needed, this can be done post hoc. Or, if one wants a more complete picture, one can “drill down” (to use a data mining term) into a particular cluster to construct a more refined and focused map of a particular section of some social system of study.

7. Finally, assemblage provides a novel approach to visualizing social systems. As a data compression technique, the goal of assemblage is to help the researcher create a low-
dimensional picture of high-dimensional data (Castellani and Hafferty 2009). For examples, see Figure 1 and Figure 7.

**Summit County 2010: A Case Study**

At this point we have accomplished two of our three goals. We have provided a basic overview of e-social science and we have outlined the SACS Toolkit. Our third and final goal is application. Below, we provide an example where we used the unique, systems-based ontology and methodology of the SACS Toolkit to solve a particular challenge we had with a specific set of web-based, digital data. The digital data in question is the Healthy Summit 2010 Quality of Life Project. But, before we get to the website, we need a bit of background on our case study.

**Communities as Complex Systems**

Our case study involves a county in Northeastern Ohio, USA we have been studying for the past two years, called Summit County. Our goal has been to understand how the 20 communities of Summit County function as a complex system and the impact this county-level system has had on the health of its various communities. Our case study is grounded in the community health science literature (Cummins, Curtis, Diez-Roux and Macintyre 2007; Curtis and Riva 2009; Robert 1999).

Over the last several years, a major shift has taken place in the community health science literature. The conventional, simplistic, reductionistic, statistically-driven view of communities as “little more than context” is being replaced by a more spatially and conceptually complex view (Cummins, Curtis, Diez-Roux and Macintyre 2007; Curtis and Riva 2009). In this new view, communities are thought of in holistic or systems terms and are seen as complex, emergent entities. This view also holds that communities function at multiple levels of scale; they operate with open-ended boundaries; they are fluid, mobile and evolving; they are not constrained by traditional notions of space and time; they are comprised of nonlinear feedback loops and causal pathways; they have histories and multiple social meanings; they emerge out of the intersection of the micro and macro, the local and global, and agency and structure; and they are nodes in a larger network of places and environmental forces. In short, communities are complex systems (Blackman 2007; Curtis and Rivera 2009a, 2009b; Gatrell 2005).

**The Data Challenge:**

While some of the leading scholars in the community health science literature are making the complexity turn (see Cummins, Curtis, Diez-Roux and Macintyre 2007), most public and community health science databases, particularly those housed on the web, have not. The e-scientific gap between these complexity-thinking scholars and most of the current digital data is due to two major reasons. First, the majority of scholars in community health science (particularly those working in conventional public health facilities throughout the United States, where a significant amount of public health data is housed) do not yet endorse a complexity science view of communities (Curtis and Rivera 2009a, 2009b; Gatrell 2005). Second, as with any new ontological framework for organizing our understanding of data, there is a lag between the new idea and supporting cyberinfrastructure. And so, when it comes to the community health science literature, an e-scientific gap exists that breaks down, rather than facilitates systems-oriented research. It is this same e-scientific gap that exists in the web-based, digital database we are using for our study of Summit County. Let us explain.
Special Issue Selected Urbino Contributions

The Case of Summit County 2010

The database for our study is entirely web-based. It was put together by the Summit County Combined Health District. The website is the Healthy Summit 2010 Quality of Life Project, which we will abbreviate as Summit 2010 for the rest of this paper (www.healthysummit.org/). It was designed to bring together the activities, concerns, data, and research agendas of all the health providers in Summit County, including its various public health centers. In terms of our research, we chose the Summit 2010 website because of the wealth of data it provides. The database is organized into two major types of data: reports and maps (See Figures 3 and 4 below respectively).

![Summit 2010 Website](image)

FIGURE 3: Summit 2010 Website

**Reports:** As seen in Figure 3, the reports found on the Summit 2010 website provide numerous types of data, including: (1) listings of all the health agencies in Summit County; (2) historical narratives; (3) in-depth neighborhood studies of three of the poorest communities in Summit County; and (4) statistical summaries of the county as a whole, including a long list of economic (e.g., household income, job growth, etc), institutional (e.g., immunizations, education levels, etc), and health outcome indicators (e.g., mortality rates, morbidity rates, etc).
Maps: As seen in Figure 4—which is one of 25 maps—the maps on the Summit 2010 website show how various social and health factors are spatially distributed across the 20 major census clusters in Summit County. Together, these maps provide a detailed overview of the economic and health inequalities that exist within Summit County.

The Ontological, E-Scientific Gap of Summit 2010

The e-scientific gap created between our systems approach to community health and the Summit 2010 website is ontological in nature. The Summit 2010 website is organized according to a conventional, simplistic, reductionistic and largely statistically-driven view of communities. Here are the specific issues with the website we had to address:
1. While the Summit 2010 website contains some qualitative reports and interviews with local residents, the majority of its reports are quantitative in nature.

2. Second, as shown in Figure 5 (see below), all the statistical reports are descriptive and summative in nature. Furthermore, these summaries are all in PDF form.

3. Third, none of the reports examine the relationships amongst communities, or how changes in one community or the county affect other communities. Instead, they examine communities individually, or they examine the county as a whole.

4. Fourth, while most of the statistical data was collected at two major points in time (early and late 1990s), changes are examined in broad strokes, as trends across the county or specific communities. None of the reports examine how the county or its communities changed over time together, or what influence their mutual, interdependent change might have had on one another.

5. Finally, Summit 2010 does not allow access to the databases used to generate its reports.

---

**FIGURE 5: Typical Style of Presentation in Summit 2010 Statistical Reports**
Applying the SACS Toolkit:

Let us briefly summarize what we so far know. As systems researchers, our work for the last two years has sought to study community health from a complexity science perspective (Castellani and Hafferty 2009). The case study upon which our research is based is Summit County, Ohio, USA. We treat this county as a complex system comprised of 20 communities. Our database for this study is the Summit 2010 website. While this database is rich in detail, it is organized according to a conventional, non-systems view of communities—as detailed in our above five points. Our challenge, therefore, was to translate this website’s data into a format for doing systems research. To solve our challenge, we employed the SACS Toolkit, a new framework for modeling complex systems. The strength of the SACS Toolkit is its user-oriented, systems-based ontology and methodology.

In what follows, we outline how we used the SACS Toolkit to solve the ontological challenge the Summit 2010 website provided us. It is important to note, however, that our goal here is not to provide a detailed, step-by-step account of our research procedure. That is forthcoming (Castellani, Buckwalter, Hafferty & Ball forthcoming). Instead, our goal is to highlight our research process, sufficient for readers to see the potential of the SACS Toolkit.

Steps to Solve Our Ontological Challenge:

1. Employing the first step in the assemblage algorithm (See Figure 2), we began by constructing a map-based understanding of Summit County and its 20 communities. Remember that, according to assemblage, the first step in the research process is to formulate a series of systems-based questions and to construct a preliminary model of one’s topic as a complex system.

   We therefore began with the maps because (while not intended by the creators of the website) they provide a systems view of Summit County. We chose Figure 4, a map of job growth in Summit County. Following assemblage (and its case-base, bottom-up approach to model building), we made this map our first case. What was great about this first case is that, distinct from the community-by-community report on job growth provided on the Summit 2010 website (which is formatted similar to Figure 5), Figure 4 gave us an immediate, systems-based, spatially arranged understanding of job growth and the lack thereof in Summit County.

   Looking at the middle of the map in Figure 4, for example, one sees Akron, the major city in Summit County (population 217,000). This city, which has been hit hard by post-industrialization, has had trouble generating new jobs. This lack of job growth is seen primarily in the communities just north of the City’s downtown. Conversely, one sees that in some of the suburban communities surrounding north Akron (as well as those in the northeast corner of Summit County), major job growth has taken place. In other words, the pattern is not random; instead things seem to cluster together into system-wide patterns. The immediate question is why?

   We cannot stray too far in discussing this question, but it has a lot to do with the out-migration of the middle-class and affluent residents of Akron to the suburbs. What we can, however, spend time discussing is the way our examination of these maps helped us build a systems understanding of Summit County.

   Going back to Figure 4, by studying this map we gained a holistic view of job growth as a dynamic dimension of the system of Summit County; changing over time, situated within and across communities. Furthermore, we were immediately challenged to consider what underlying social forces might account for this system-wide difference in job growth. Is it out-migration? Is it the emergence of poverty traps? As we worked to develop our questions, we moved our focus on the map back and forth between the local (individual communities) and
the global (the county), attempting to more accurately formulate our questions. This type of back and forth movement is exactly what the SAC Toolkit is designed to help researchers, at this initial stage, do. Only by purposely engaging the data in such a bottom-up, theoretically grounded manner (research questions and preliminary model being built simultaneously) can one quickly obtain a systems view, regardless of the data’s particular ontological format.

2. Our next step was to construct a preliminary model of Summit County. To construct this model we continued analyzing, from the ground-up, the website’s maps. To organize our mounting visual data—there are 25 maps on the website—we turned to the SACS Toolkit filing system, via social complexity theory and its major folders: field of relations, environment, etc. Using this filing system and its folders, we generated the model shown in Figure 1 (See above).

Looking at Figure 1, one can see all the major folders of social complexity theory. For example, there is the environmental folder, which contains our ideas about the major forces impacting Summit County and its health. There is the web of social practices folder, which outlines the major factors out of which our 20 communities emerge. And, there is the network of attracting clusters, the structure of which is displayed as a network—see Figure 7 for a magnified version of this network. As we hope Figure 1 helps to demonstrate, by following the SACS Toolkit’s algorithm we were able to construct, from the bottom-up, our own systems-based, ontological framework for our study. With this framework developed, we were able to organize the rest of website’s data, particularly the statistical data, and construct a grounded-theoretical model of Summit County as a complex system.

3. With our research questions and preliminary model created, we needed to prepare for the second phase of the assemblage algorithm: constructing a working model of Summit County. To construct our working model, however, we needed to move from the maps on the Summit 2010 website to the statistical reports. The result of this move from the maps to the statistical data resulted in the database shown in Figure 6 (See below). To construct this database, we went through all the reports, copying and pasting information about each of the 20 communities into an SPSS database. (Figure 5, shown previously, shows a page from one of the reports we used to construct our database.) The result was a vector matrix. As shown in Figure 6, reading from left to right, the list of variables for each of our 20 community vectors included all of the various economic, social and health outcomes indicators discussed in the various reports, from household income to teenage pregnancies to educational levels to mortality rates to job growth rates, at two major points in time: the early 1990s and 2000.

Challenge Solved:
At this point in the research process, we had solved the major ontological challenge the Summit 2010 website had presented us. First, by following the assemblage algorithm—which requires researchers to (a) develop a preliminary model of their topic as a complex system and (b) construct the initial systems-based questions guiding their study—we quickly found a systems perspective of Summit County through its maps. Second, to re-organize our map-based data according to a systems-based ontological framework, we employed the filing system and folders of social complexity theory. With this preliminary model developed, we were able to build our numerical database, with data for two points in time: early 1990s and 2000.

Phase 2 – Method:
With our preliminary model and database complete, we were ready to move to the second phase of our study. In this phase, the goal is to use the various complexity-science methods employed by the SACS Toolkit to construct a working model of Summit County as a complex system.
It is at this phase in the research process, however, that we come to the end of the current article. Nonetheless, while we cannot go into detail about all the various methods we used in our study, we do want to leave the reader with a visual compare and contrast.

Because of the database we constructed, we were able to employ a variety of complexity science techniques that we would not have otherwise used on the Summit 2010 digital data. Such techniques included k-means cluster analysis, the self-organizing map algorithm (a neural net technique for data compression, clustering and visualization), agent-based modeling (specifically the cellular automata), network analysis and the qualitative complexity method, qualitative comparative analysis (QCA). (For more on QCA, see Ragin 2008; Ragin & Byrne 2009.)

The result of all this analysis was a rather detailed systems model of Summit County. Figure 7, for example (see below), is a network analysis of the 20 communities in Summit County, based on their relative wealth and well-being. If the reader compares this systems-based map to Figure 5, which is how the statistical data is presented on the Summit 2010 website, one can see that the SACS Toolkit allowed us to go very far beyond the data. We also hope that this comparison shows readers the e-scientific strength and utility of the SACS Toolkit for doing systems research with digital, web-based data.

Conclusion

In this paper, we have explored how the SACS Toolkit functions as an effective e-social science method for modeling complex social systems using digital data. It is effective because of its unique ontological and methodological approach to modeling, which is systems-based, rigorous and yet very flexible. In the case of the community health science, for example, the SACS Toolkit allows researchers to model communities as complex social systems using digital data, which is a major advance in the literature.

As a side note, the Summit 2010 website is not the only example we have of the mediating, e-social scientific utility of the SACS Toolkit. We also used the SACS Toolkit to build a virtual map of the new science of complexity, called the Complexity Science Map (www.art...
We make this side note to illustrate that the SACS Toolkit is very flexible. It can just as easily be used to create a web-based map of complexity science that connects data, computers and people in efficient and effective ways, as it can be used as a systems-based ontology and methodology for modeling complex social systems with digital data.

What makes the SACS Toolkit so useful in both these instances is: (1) its explicit, complex systems approach; (2) its systems-based ontology; (3) its rigorous yet flexible filing system, which is designed to function as a complex system; (4) its case-based, data-compression, visual algorithm for modeling complex systems from the bottom-up; and (5) its tremendous flexibility with all types of data and methods. Given this list of attributes, researchers may find the SACS Toolkit similarly effective in other instances where they seek to model a topic as a complex social system using digital data.

REFERENCES


Daily Life of Non Profit Organisations Inhabiting the Web

Gaia Peruzzi and Andrea Volterrani

In today’s society, new relationships, interactivity and new social spaces are the founding grounds of the recent explosive development of digital media and of the web 2.0. The aim of this talk is to understand if, and in which way, non profit organisations, born to produce widespread relational interaction, are able to “profit from” the use of these new tools, specifically those linked to social networks, to which access is, among other things, almost always free. Therefore: which activities and which services are offered by volunteer organisations inhabiting the web? Does online interaction translate into concrete opportunities for volunteers and for their communities?

This paper will illustrate the initial outcomes of an investigation carried out, integrating strategies of quality and quantity on a selected sample of Italian organisations.

1. Bonding or bridging? Social capital of non profit organisations in web 2.0 age

The following research bounds its origins to a crucial and widely discussed subject matter of the latest years, the production of social capital in the communication spaces of modernity, created and pervaded by new digital technologies.

Social capital is intended as the union of all available and usable resources to an individual, an organisation or a territory in a specific social, cultural or economic context.

In time the concept of social capital has had different developments and connotations thanks to fundamental contributions of numerous scholars (Bourdieu 1983, Putnam 2004, Coleman 2005, Field 2004; on the social capital as factor of local development see Bagnasco, Piselli, Pizzorno, Trigilia 2001), and its definition has found interesting convergences in numerous social studies.

According to a recent definition that effectively synthesises the opening of this multidimensional concept to the analysis of communication disciplines, we can define the social capital as the “sum of the value that arises from the social relations that are available to an individual or collective subject” (Martino 2008: 25).

The social capital itself gives substance to these relations, and while for too long it has been enclosed in narrow spaces, in order to guarantee an extended circulation, looks now for alternative forms of interaction resulting more dynamic and open.

The union between diffused relations and social communications serves to the expansion of capital in all the interstices of society. Moreover, social communication

---

42 The idea and the development of the following research is the result of the collaborative work between the authors. In this paper the paragraphs 2.1, 2.3 and 3 are to be attributed to Gaia Peruzzi (Sapienza Università di Roma), while paragraphs 1 and 2.2 are to be attributed to Andrea Volterrani (Università degli Studi di Roma Tor Vergata). We wish also to thank Stefania Carulli (Sapienza Università di Roma) for the contribution to all the activities of the research and Andrea Cardoni for the collaboration to the analysis of the websites.
itself is born and grows in a stable context of diffused relations – even if not necessarily communitarian – representing the culture of such context, interacting in the relational spheres and the social and territorial contexts at different levels of special and emotional involvement in the symbolic imagination of the single or of the collective.

Among the main causes that feed into the process of generation and remodelling of the social capital we can point out the basic trust, the cooperation and the norms of reciprocity, or the relational webs.

The nature itself of the social capital is also differentiated among its transmission dynamics. On the basis of these different dynamics, in the course of time many types of social capital were born, grouped by Putnam (2004) in two macro categories: on one side the social capital that “closes”, that guarantees specific reciprocities and that generates solidarity, and on the other side the social capital that “creates” links with the external and that welcomes the individual and collective diversity.

According to this the “intermediate social formations, in particular voluntary work represent an interesting field of analysis for in it different open and closed modalities of the social capital intertwine” (Mazza, Volterrani 2008: 19).

It is not hard to notice the action strategies, adopted by those who are interested in taking part of an associated context, in order to interact with whom is already integrated in this type of community.

Differently, the opening to a wider dimension of the social capital, such as the kind of openings of the organisations of voluntary work, is the next step towards an expansion of one’s own sphere of influence.

The social capital that “opens” “puts in relation and is about relationships among different people, in diversified social contexts: the relations with people coming from different communities, thanks to whom one can access a wider area of resources than the one of one’s community of origin”.

In particular the expansion of the associative communities towards communities that are active in the digital world remarks an interesting signal of such openness. This definition brings at the same time the necessity of an additional observation on the concept of community itself, in order to meet the purpose of our discussion.

In order to clarify, let us compare the types of on line communities that witness the transition from the communities of space (territorial communities of place) to the communities of identity (Norris 2004).

Will the communities of on line identity tend to continuously suggest the creation of groups of similar individuals with the same beliefs and values as well as similar social-demographic characteristics (gender, age, ethnicity) or will they suggest groups of individuals with different values, beliefs and social characteristics and in possible conflict?

The individual choice is not dichotomist, but is found in a continuum that sees at the two extremes groups (and communities) with functions that are respectively bonding (social capital that unifies, referred to the links among similar, in proximate social situations) and bridging (that refers the links among different people and in diversified social contexts). A choice, therefore, that continuously mediates between the real attempt of the groups and the communities and the virtual attempt (Spinelli, Volterrani 2009).

On the other hand the most relevant issue in this context is the social capital that is capable of creating a relation, what Woolcock (2001) defines as linking: in other words the set of rela-
tions capable of constructing bridges among different people, between the interior and exterior of different communities, that spreads in numerous contexts the available resources of each one without giving for granted the values nor the established communitarian praxis.

The communitarian dimension is here referred to as containing significant relationships, the privileged place where it is possible to witness the multiplication and the diversification of the relationships, in particular inside those associative spaces that function as social motor and as social diffused relations.

The social capital is a concept that is in close connection to non profit organisations.

A remark on the social capital in relation to the different of the non profit organisations dimensions – both operatives and of identity – can underline the potential effects that a expansion of the capital itself can have on the organisational realities.

The social capital, therefore, increases the relations for and around the recipients of the services of the associations, trying to re-build or build new available resources (physical, cultural, relational, communicative, and economic) for those who live in spaces empty of such; reflecting whether relations among voluntary workers develop and how they develop; to rethink the role of the social capital itself not as a simple sum of connected social capitals, but as something more and different; to think about the territories themselves, for the maintenance and the establishing of social cohesion, but also according to the goal of incrementing and of differentiating of the relational tissues that are present.

In particular a reflection on the different territory build by the Internet and the virtual worlds is now more than ever acquiring an important centrality. The capacities of the Internet of incrementing the relations also inside the new medial technologies, contribute to diminish the digital inequalities that are added to the existing social inequalities (Bentivegna 2009).

The observation of the new forms of social interaction, created by the digital webs and the impact of these on the individual and the communities, seems to be creating crucial matters in the sociologically inspired subjects. While a larger vision that emerges in a fertile integration of internet – both inside the standard use of other medias, and in the pre-existing social network – has been maintained in the last years, in parallel to the technologic evolution of the Network and its growing diffusion.

An elaboration, taking place in the most general field of means of mass communication (Bolter, Grusin 1999), on the observation of the fruition of the digital media allows to face the issue with a more global approach, mediating between the two fields in which these means of communication are placed: between the virtual sphere and the real spaces of social action.

Now more than ever, the passage of the digital world from a more static dimension – technologically oriented and characterised by a raising sociality – to a dimension which is enriched by the social relations mediated by the internet and the pre-existing ones, puts down the obstacles that divides these two worlds and it underlines its reciprocities.

Why then go on the Web? The “utilitarian” arguments about it are not completely convincing seen that they do not identify the surplus value of a “virtual” space. What is possible in the Web that is not in actual presence? What can one learn that is not possible to experience otherwise? One does not (anymore) go on the Web to “take” (download) but to “make” and to “make of oneself” in relation to others, to construct an identity that combines the formal and the informal, different languages but integrated, in prospective of an environment more open as possible in which the individual identity is constructed in relation to a multitude of communities (Spinelli, Volterrani 2009).
The diffused relation, therefore, is considered a resource for the non profit organisations in case these are capable of assuming or not, the role of “bridge”, of link with the symbolic resources, with the aim or making them accessible to one’s own community of reference (Volterrani 2008).

According to this it is interesting to question whether this opportunity is actually perceived as such from the organisations themselves, and to what mechanisms this relation is bound in the dynamics of the universe of digital technologies. The growing and diverse diffused relations of the non profit organisations can create the basis for a delocalisation and a reorganisation in new potential forms of communication and organisation. We cannot predict their consequences on the types of relations and the contexts of solidarity but surely we can state that they are reaching more inclusive strategies of social communication, more participative (Volterrani 2008), more pro-active (Morcellini, Mazza 2008).

But in the daily practices how does the social capital that we have been speaking about links itself to the opportunities that are offered by the new media? In what way the diversification and the multiplication of the relations are reversed and integrated in the life of non profit organisations?

2. Investing in cyberspace. New sources of social capital for social work and culture?

2.1. The research

The aim of our research is to understand whether non profit organisations, which have activated online services and regularly take part in social networks, obtain concrete benefits from these investments in digital media.

So, this work is an exploration, a journey in the life of various pioneer organisations having a double (on and off line) life and in the new services for users and partner offered by the web 2.0.

Apart from the novelty of the issue, this theme seems to the authors very interesting considering the fact that, if the economic importance is never the priority in the mission’s definition of a non profit agency, on the other hand it is undeniable that the material and financial needs could create deep and indispensable problems in the daily routine of many of these organisations: cyberspace, with its infinite multiplication of sites and freely accessible programmes, would therefore seem to offer important and unexpected resources to its subjects.

Because of the exploratory nature of the research, we have selected an emblematic sample: six non profit organisations, three belonging to the social sector and three to the cultural one, pioneer of the web. In fact, all our organisations use the site and various web 2.0 tools, including social networks, in an intensive and regular way in order to supply services to users, members and the public.43

The choice to understand and distinguish, within the sample group, active organisations both in the social and cultural-artistic sectors derives from a two-fold consideration.

Firstly, these are the two most represented types of non profit organisations, as least in our country. Furthermore, we thought that the type of relationships that characterise these organi-

---

43 In the preliminary phase of our research, for the selection of the most emblematic cases, we looked into the websites of different Italian non profit organisations, and we have contacted experts and privileged testimonies on the subject. During the monitoring quite negative results has emerged: many associations presented websites that were not up to date, and very few seemed to actually being able to offer on line services.
sations makes them interesting to compare. Indeed, if the organisations that work toward contrasting difficulties and vulnerability build and promote intense, long-lasting and deep relationships, because they need to “make contact” with a person’s life and life story, then the relationships between the cultural organisations and the public could be much “lighter”, because they are often occasional and immediate, limited to the event.

The organisations that we have studied are the following: in the social sector, the Tuscan unit of AVIS - Italian Voluntary Association for Blood Donors (Florence); the Misericordia, lay confraternity giving aid to the sick (Florence), and the Rondine Cittadella per la Pace (Arezzo). For the cultural-artistic sector: the Foundation for Contemporary Art Fabbrica Europa (Florence), the Alleo association (Pisa) and the circuit of Teatri Possibili (stemming from the Free Theatre of Milano, and having local headquarter in Pisa).

In compliance with the investigative aim of the project, we attempted to diversify within the two sectors. While AVIS is an organisation devoted to collect blood from volunteer donors, the Misericordias offer a wide range of services from health aid to social work, from funerary services to civil defence. The third association, Rondine Cittadella per la Pace, carries out initiatives for peace, also in the schools, and runs an international student committee for young people from all war-torn countries.

In the second group, the Teatri Possibili promote activities revolving around the theatre (production, distribution, courses and training workshops for actors and for the public), whereas Fabbrica Europa is a workshop and stage explicitly devoted to the contamination of the arts and to the language of performance (theatre, dance, music, installations). On a more literary front, Alleo is a current affairs, political and literary web magazine that not only offers services for publishing companies, writers and those keen on culture, but also organises cultural festivals dedicated to travel.

Some common factors balance out the differences of these associations’ diverse missions and activities, maintaining a certain degree of comparability among the diverse elements of the sample groups.

All six organisations are non profit by law, and run as such. Even if in different percentages, they all have volunteer people and offer volunteer services. They all have been active for years and all have a non-cyber past, which still flanks the new life on line; the sole exception is Alleo, that was activated initially on the web, and later appears in the “physical” world (it guarantees the double life that was a pre-requisite for our sample selection).

Even though some have a cause, international partners and relationships, the majority of the relations of these organisations are provincial or regional. Then, all six organisations provide services of recognised quality which circulate and compete in respective markets.

At last, some remarks on the method of our investigation. We have integrated on and off line paths and tools, just as suggested by literature on this subject: therefore ethnographic observations-participation took place on sites and main social networks (almost always Facebook and often Myspace). There were on and off line interviews and privileged testimonials (which were often recorded in various moments when possible) and obviously internal comparisons between the two groups and within the two groups (social and cultural-artistic).

2.2. Paths towards integration. Experiences and stories of the social associations

The capacity of social work organisations to create social capital manifests in different and services entities – that are active in the territory, among formal and informal relations, and among the recipients of the services and the promoters of the association, through the promotion of the activities and projects.
But is the web capable of giving measure of the social wealth, and at the same time, of the complexity of the relations that are typical of the work of the associations?

In the following we shall analyse the effects of the changes made by the associations taking part in the research: the relations with the voluntary workers and the users, the collaboration with the public and private partners, and the internal life.

To speak about the new relations created by the non profit organisations on the web and on the virtual communities implies to analyse their original presence in the territories of the single organisations with their own history and specific identity, that counts past relations within an existing community, with common values and that shares the same symbolic universe; but also implies underlining the strategic role of the associations that through the web are faced with a different public of reference.

2.2.1. The benefits in the relation among voluntary workers and the clients

The associations that operate in the social field, even if they intervene in different environments, live in close physical proximity to their voluntary workers. This is due mainly to the peculiar characteristics of its activities: donating blood (Avis), sanitary assistance and civil protection (the Misericordia), the hospitality for young people coming from countries at war (Rondine Cittadella della Pace). These activities, which are taken as example, have in common their proximity to the people that are involved in the action, the sharing of the environment, and an extended and deep knowledge of the people involved.

Lighter relations. The associations that we are examining operate in different contexts but share a common trait: their job consists mainly to meet the necessities and needs of a person. If it’s about transportation of sick people, as in the case of Misericordia, or about talking blood in a hospital, in the case of Avis, or in case they offer a place to stay to people coming from counties at war, in the case of Rondine, this strong off line dimension lives independently. It is a primary and a dimension of priority. Therefore the on line activities are coupled with the activities off line, without replacing them or the relations created by the organisations.

Facing this consideration, the associations live an on line dimension as a broader space in which expressing themselves in a more informal and creative way. In particular social networks like Facebook has now become privileged instruments for the promotion of the activities of the organisation, through webs of contacts of voluntary workers, and promoting their image to an external public wishing to receive information about the themes concerning non profit work.

Avis Toscana has many groups on Facebook founded and managed by the voluntary workers belonging to different local offices in the regional territory, but there still is not an official group: this in one side is a good sign, because it means that the voluntary workers and the local managers take the initiative and create a community, on the other hand it shows that the absence of an unified regional group is replaced by other channels of action, just as effective. As a matter of fact the website has become a tool also for sharing images created by the voluntary workers, and recently a group called Avis was created on Flikr.

Misericordia and Rondine have very active groups on Facebook. Rondine has an official group managed both by the collaborators of the associations, and by the young people that live in the student dormitories: the social network becomes a way of maintaining contacts with one’s own network of friendships, as well as an occasion for communicating with ex fellow companions from their permanence in the student dormitory.
**New horizons: beyond the physical territory, towards the cyberspace.** Often the associations that operate in the social realm place their offices in specific locations and contexts: Rondine is located in an old village not far from Arezzo completely inhabited by the young people of the residence halls, while Avis and Misericordia’s offices are often located close to old town centres, which makes them easy to reach and recognizable to the surrounding community. Adding to this “territorial” dimension, we find a symbolic space that ties together the operating entities for the realisation of their objectives: a space where sharing the same values is of great importance to the shape the identity of the people working in the non profit realm. In the web 2.0 era though the association universe, often considered self referential, meets with millions of possible worlds where the organisations, and people with different titles that take part, can rebuild new spaces and paths of interaction with old and new entities, operating in the same sector, or with totally different interlocutors.

**More users.** What are the users of the voluntary associations? In the offline activities the associations of the social work operate with voluntary workers and collaborators that are trained by the association itself. Therefore the association knows both the organisational steps that lead to the final service provided and also is aware of the human capital that is available for concluding this action. But the online dimension broadens even more this prospective. While in the past their websites were used only by the voluntary workers themselves, now the associations works as an information provider for the users that wish to be informed by more influential organisations.

Thanks to the presence of statistics and measurements in the websites of these three associations it is possible to map their type of usage: in particular we can trace the time of navigation, the number of the pages that has been read, we can study the traceability of a link (what online path has lead the user to the website), and the number of open newsletters (like in the case of Avis). Both Rondine and Misericordia have been active in this sense. Avis, instead, has thought of different ways of readings its website, organised according to the different needs for information expressed by the users. For example we find a folder containing the online press dedicated to the journalists, a section with the news for the regional managers of the association, and finally the basic information on the activity of the association for general external users.

**2.2.2. The collaboration with the public and private partners**

The work done on the website has intensified the relations with the pre-existent partners at the territorial level, both public and private. In this matter the web has had a unifying function, mostly thanks to the simplicity of the technologic instruments and the absence of costs.

The regional Avis talks, discusses, evaluates and is up to date; shares ideas with the local offices and with public entities (mostly with Centro Regionale Sangue): if there is a possibility (and the interest) of developing new ideas at a regional level that will be done, otherwise each single office will carry out their own project autonomously but always sharing an optic of collaboration.

*The president of Avis Tuscany*

*The culture of evaluation.** The non profit organisations that have been analyzed, even if they do not share yet an organic and cohesive system for this type of activity, tell us about a new emerging necessity of inquiring deeper into the projects and services that are offered, looking more into quality and quantity.
2.2.3. The internal organisation

The growing and intensified use of new technologies has brought most evident results in the internal life of the association.

Towards a new organisation. There is a clear need of hiring skilled staff for the management of all online content, but at the moment it still has not converged in the creation of specific professional roles.

There are many collaborators working on the online dimension, but most of them are often busy working on contractual assignments or more urgent matters. Therefore the work on the web is now integrated with different activities, as well as complimentary ones, concerning different organisational sectors, while there is still a lack of a full time work team for the management of online contents. The matter is quite different in the communication with external entities to the organisation: the growing need to establish a good communication has developed a new collaboration with private agencies specializing in technical support and management for some online services. This is the case of Misericordia that since a long time has created a profitable relationship with an external communication agency for the management of more delicate technical services. The same thing applies for Facebook, where even though it has become an established tool for the communication of the associations, this still has not resulted in the creation of specific professional positions that operates exclusively in this field.

More cooperation. Following what we have discussed in the above paragraph, or better the lack in specific online-activity experts, we can witness a growing number of organisational sectors appearing in the online contents. For example Misericordia has introduced an editorial system for which local offices can access and autonomously publish contents on the association’s website. While Rondine’s collaborators, even if they do not have a specific person for the input of website contents, actively participate to the creation and publication of the texts.

A project involving even more people, who was under experimentation, has been just recently approved by the Avis:

Still under construction is a very interesting project called Agen-dona, it is an online planner for booking blood donations from the members directly to the transfusion centre. It is a project that had involved the Crs, Centro Regionale Sangue, and consists in a document that has been shared with the local Avis that does the bookings, and the transfusion centre. This way one can automatically book the available dates in the planner. This project has been inspired to an idea of the Livorno Avis that had started an online booking system that only worked locally with no coordination at a regional level or with the public entities. Thereafter the project had been proposed at a regional level many times, and when a trial period had started, since March 2009 it has involved three transfusion centres in Tuscany (one of which is very large at Careggi, a medium size one at Pontedera and a small one at san Giovanni Val D’Arno). The booking of the transfusion happens only thanks to the mediation with the associations and the transfusion centres, it isn’t possible for the single person. We are also working on a security system for the transfer of personal data.

The responsible for the projects at Avis

Saving on administration costs. The developing interest in the opportunities offered by the web 2.0 has resized some managerial costs in the final balance sheet. The extensive use of the
Special Issue Selected Urbino Contributions

email and of free-of-charge telephone software such as Skype, or charging software like EasyCall contributed substantially to the cut of the costs. Rondine association for example uses both these software daily for communicating with contacts from across the globe (promoters, formal students that have returned to their countries and got involved in the social realm there, voluntary workers that operate in countries with poor telephone services) and to keep in contact with the international public entities that, like the cultural institutes abroad or the Italian embassies, are active in the selection of candidates staying at residence halls.

The same is true for Avis which has created on line environments thanks to an intranet system, while Misericordia in answer to these technological innovations still likes to uses paper, mostly for promotional material. This is mainly due to the presence of a big slice of voluntary workers and members that are not young enough to be comfortable with on line instruments. Rondine, for example, still continues to publish and send out to their sustainers their paper magazine (that actually does have a large scale of distribution internationally, thanks to its broad network around the world) while at the same time publishing on line as well.

2.3. The advantages of the double life. Experiences and stories of cultural associations

Experiencing the web can transform the association. Once “leaped” into the cyberspace and gone through the processes of alteration, one cannot go back. But there are undeniable advantages that make up for the investments in time, resources and competences needed. This summarises what emerges from the trip to the double life of the non profit cultural organisations that daily attend the social networks.

We will proceed examining the transformations that came about in the three aspects of the life of the associations: the relations with the public regarding events and shows, the collaboration with the private and public partners, and the internal life; because, what is well known, the dynamics of identity and communication proceed deeply intertwined among themselves and among the external and internal aspects of the organisation (Invernizzi 2000).

2.3.1. The benefits in the relations with the public

A larger public, more young people. After examining the relationship with the public, the investments in communication result definitely fruitful: our cultural organisations pioneer of the web 2.0, facing a renewed supply of information and services, has witnessed a sensitive growth of their public (mostly young people), and an improved interaction with it. In a context where advertisement on the website and through the email has now become an “obvious” promotional tool, which is much needed but also is becoming an automatism, social networks and in particular Facebook have been suggested as the new channels of contact and of promotion of the events.

Thanks to the presence on social networks, this year there has been a visible change of the public. Now it counts younger people, looking for cheaper tickets... there has been a raise in the selling of 10 euro tickets and a fall in the 20 euro tickets... even though we continue to sell them for reasons of good image... Moreover Facebook has been the winning instrument for the subscription of new voluntary workers... for the cultural Cantiere of Prato this year we have recruited more than 30 voluntary workers on Facebook...

The intern who has reorganised the profiles of Fabbrica Europa on Facebook

Similarly Alleo and the Teatri Possibili, that always praised having among their followers many students, declare that following their landing on Facebook they have witnessed a raise in the number of memberships and a fall in the average age of the public.
The public becomes audience. New spaces on the web 2.0 and services, that are not always technologically up to date, can still translate into opportunities to perceive a reaction from the public that, according to the declarations of all three associations, rarely negates a reaction. Pre-sale of on line tickets for example is greatly valued, since it allows to evaluate and to decide comfortably from one’s home the solutions for a better purchase. The forums that Teatri Possibili open on their website for each of their new show are a place of meeting and discussion also very frequented. Although it being live, the theatrical event bounds the spectator to be part of an anonymous public: here instead each single member of the audience can function as critic of the performance, fan of the artist, promoter or detractor of the event. In any case, an independent voice, recognisable and reachable, that does not mind to corrupt the formal writing with an expressive minimalism, typical of the new computerized interactions.

CUORE DI CLOWN / CLOWN’S HEART
22/06/2009 13:38
Exciting show yesterday night at the Libero!
William Medini and his crew brought back alive for us “the tale of the clown”…
Good job guys!!! Funny and good:-)
… there were the sweet-and-sour, the sweet melancholy of the clown, the street artist but also the simplicity and passion of William’s work and life
DO IT AGAIN!

Napoleone
on the forum of Clown’ Heart of Teatri Possibili

THANK YOU THANK YOU THANK YOU
22/06/2009 16:01
I agree, it was a really funny and exciting show also from the inside
I thank William from my heart for all he has brought to us and for the generosity with which he works.
I want to thank all of my fellow partners (or at least almost all... except the rude ones). It has been a real pleasure to work with them.
I hope we can repeat the performance!!!
See you

Pistachio
on the forum Clown’ Heart of Teatri Possibili

So, when asked to intervene, people like to use the cyberspace.

They write and send material. Participate in the surveys suggested by the Alleo and its visitors, and protest when the editor of the webzine publics the diary of a Big Brother’s participant’s boyfriend: the argument is not appropriate to the issues of a community that mirrors itself in “higher” passions, like the ones for literature, politics and the news!

Meeting someone in the web can lead to face to face relationships.

Aspirant actors that have participated to publish on line castings of the theatre company can be recruited for the mise-en-scene of a production, while the friends of Fabbrica Europa contacted on Facebook can make themselves recognisable the night of the event to the girls at the sales desk.

2.3.2. The benefits of the relations with partners

From working on the Web to webs of work. To work on line helps creating networks with new entities and strengthens existing relations. As a matter of fact, when the website works properly as a platform, the travelling of information and sharing of the material, that are the strategic activities of a “horizontal” organisation, becomes tremendously simpler and easier.
Our three associations, even among different histories and development, all seemed completely aware of the irreplaceable role of the CMC in networking with the exterior, and also in the internal managerial network.

Fabbrica Europa was already active more than a decade ago on an international level when built a website for a better visibility and for a more powerful tool of communication with partners abroad. The Teatri Possibili created the website right after the association was born with the aim of “creating an artistic community” that, involving theatres and companies on a double circuit off and on line, would promote a younger and dynamic culture of theatre. In the case of Alleo the creation of the website was the event that, giving a clear and recognisable shape to their informal group activities, brought the association to exist officially and to be introduced to the public institutions and to the organisation of the festivals and other off line events.

Obviously working a lot on the web has brought some changes to the organisational routine... but this has been an extremely positive factor. The balancing for example... the economic one is less stable, but the artistic one on the other side... now it is always proceeded by artistic judgment on the initiatives, and this helps in the internal management during our meetings to keep us always up to date on continuous projects or successfully completed projects. Moreover, having someone in charge of the web contents has created an additional reference for other companies, that now know with whom interacting for the publication of material and will avoid, like it has happened in the past, losing material and information due to not having a person directly responsible... in other words, it improves the relationship with the companies and creates an immediate feedback.

A manager of Fabbrica Europa

Finally, Skype has been mentioned by all three organisations as the usual working tool for meetings and “distance” conference calls with collaborators.

A more international culture. To work with the Internet and with the social networks helps the creation and the establishment of international networks. This is more specifically about the benefits that we spoke of in the previous point. In a country where often one complains the scarce international involvement of the public institutions, this point needs more attention. Both for Fabbrica Europa and Alleo collaboration with partners from abroad has gone from being just a daily occupation to being a distinctive trait that characterizes the organisation: the website of Fabbrica Europa includes an English version and in the home page a European Community flag is clearly displayed; Alleo has chosen an international appearance also in its name, whose extended version reads Discovering Contemporary Cultures.

2.3.3. The benefits in the internal organisation

Healthy cuts. The first change in the internal front that has been witnessed by the associations after the investments on the web 2.0 was always a positive balance in the total costs of management and communication: the expenses for the Internet connection are much inferior to the amounts spent around dealing with paper documents.

The processes of switching to digital products appear to be irrevocable. The web “has eaten” numerous products (posters and brochures of the Teatri Possibili and of Alleo, the annual catalogue of Fabbrica Europa, and many other paper documents), Microsoft Messenger is becoming the internal tool of communication at Fabbrica Europa and Skype, as we have seen, is used for communication with partner associations.

Telephone and fax are still surviving, even if used less, because are indispensable for communication with the Public Administrations.
The cyberspace will absorb some of the daily expenses from these non profit organisations, which often struggle against chronic loss of liquidity or founds.

The most exemplary case, obviously not to be suggested to all association but which makes a good example, is the one of managers with no desk of Teatri Possibili: both the president and the director, while travelling a lot and dreaming of “a revolution” of the managerial practices of the world of theatre, has chosen to renounce to a physical head office, “avoiding expenses and worries”, and manage all their contact just on their cell phones and netbooks.

Little forts of communication grow. The devices offered by web 2.0 are often free and easily accessible, but turning them into daily work instruments can require important investment of time and human resources, and the openness to discuss about the roles and internal hierarchies, often even the identity of the association and of its members.

Facebook is a real full time job. Everyday we must change the status of the group and send communications of events that are planned in that period. Obviously during the festival the activities are much more, the communications are sent out more than once a day, there are many chats taking place at the same time, the pictures of the show are put up the day after the performance. This is how it works: the Facebook group will inform of the activities of the photographers that has been shooting the night of the show and share them as well on Fabbrica Europa’s profile on Flikr… it’s a sort of exchange and collaboration, this way we promote the associations and the people that collaborate with us… The Facebook work is harder than it seems: we need to communicate daily, informally but with contents that are often, or better should be institutional… in other words, we need to work on the usability of the contents, to make them easier to use for all users… it’s a great work of synthesis and adaptability, we cannot have a distinction between communication on and off line… we all need to work together, confronting on every bit or idea to publish, both on the website and on other channels… these are all positive changes, but also quite big…

The intern at the communication office of Fabbrica Europa

The second life, that is the on line life, is not a costless process. It can produce fractures among the generations, among younger visions and more formal visions of the association, and others that we can’t recognise in the emerging styles.

The increase of the Facebook activities has created internal discussions… on Facebook was born a mini-community, the image and style are less formal, more “young”… in other words, Facebook has special and specific promotional strategies… it isn’t enough to just upload our brochure on the group page, we need to create an identity well defined and work on it constantly… on the other side, on the website, the communication has remained more traditional, that of the institution and the older means of communications…

The manager of Fabbrica Europa

Beyond the tensions that are inevitable during each changing process, what emerges from the complete analysis of the material which is interesting, is that the adventure on the web seems to trigger processes of discussion, of self-confrontation and observation of the activities of internal organisations that push the organisations to reconsider the role of communication, the placement of the resources, the investments on the sector.

3. Returning from the exploration

Does an intensified and programmed use of the instruments of the web 2.0 and of the social networks change the daily life of non profit organisations?
Even though the limited dimensions of the sample we have produced does not allow for a generalization of the results of our research, the processes of transformation that we witnessed are so evident and recurrent that we consider legitimate to see them as likely consequences of the practice of the double life, on and off line.

Creating an online community transforms the identity of a non profit organisation, as well as its relation with the public and the territory.

The social capital grows especially with the improvement of the interaction with the exterior: the users or the audience increase, together with their interaction with the organisation; moreover the collaborations and the partnerships can grow stronger, both with public and private entities, in Italy but also abroad. These innovations can trigger virtuous processes in the internal life of the organisation, towards the strengthening of the communication activities and an improved dynamism, through re-positioning of the resources, updating the skills, and reinforcement of the culture of evaluation.

Noticing that these changes are witnessed both by the associations of the social sector and the cultural-artistic one, and equally from entities with a larger or smaller percentage of voluntary workers, strengthens, according to us, the meaningfulness of these results.

Finally, some characteristics of the organisation have emerged as factors positively influencing the use of the web 2.0: a predisposition to the innovations, the technologies and the contamination of the language (about this matter the cultural association are rather emblematic); a well established organisational experience; a tendency to have a de-centralized organisation; the presence of young and instructed communication staff; the self-observation, or the capacity of observing and intervening in the changes taking place, and finally the modesty necessary for questioning oneself continuously.

Probably if we were to analyse this matter more in-depth, new important aspects would come to light, among which more problems and issues than those that we have discussed. But, through our first incursion, the new hybrid overviews of the cultures off and online announce to be full of promises.

**Bibliographic References**


Invernizzi E. 2000 La comunicazione organizzativa: teorie, modelli e metodi, Milano, Giuffrè.


Consumer 2.0, participation or exploitation?

Piergiorgio Degli Esposti
Università di Bologna
piergiorgio.degliesposti@unibo.it
Dipartimento di Sociologia, Università di Bologna, Strada Maggiore 45, 40125 Bologna, tel +39 0512092882

The papers analyzes the forms of prosumptions within web 2.0 environment and how producers consumers and prosumers act and relates each others through their practices and contemporaries forms of participations and how such participation may be perceived as exploitation.

Consumer 2.0 or prosumer? Participation or exploitation?

What is written on the back of the pack of an iPod, product symbol of our time, offers the opportunity to reflect on what has transformed the world of consumption and with it the Western society. The sentence in question is “Made in China Designed in California” (other similar quotations are found on most products we use every day): it expresses clearly and as is now apparent, a clear separation of production material and immaterial production, but also and above all, identify what constitutes value to consumers, that is what they regard as added value for which they are willing to pay more.

Since the industrial revolution Western society has defined itself as such precisely because the main economic model was of that type. Modernity is seen as an era in which the logics of production such as standardization and assembly line on all dominate the productive processes (Ritzer, 2009). Only with the specific phase defined post-modern, the production processes take a back seat to those of consumption: it is thus evidence of a new centrality of values, with serious consequences and impact on global economic processes and lifestyles of people. Many speak of consumer society, consumer culture or consumer capitalism to describe this shift in focus: the West, previously supported by an industrial economy, has subsequently based its survival on an economy of consumption, consumption that is not necessarily regards the enjoyment of material goods, but also and especially of services and intangible resources.

The dematerialization of consumption and with it of economic resources, made possible by digital technologies, as well as being a major cause of the contemporary economic crisis has changed many of the paradigms of interpretation of society economic. Within this scenario, products, brands, lifestyles and consumption styles play a central role in the process of creating meaning within a society. These elements, in a symbolic setting, blend with what is called the consumer's participation in the process of consumption, or to use a term typical of the online culture, the user-generated content. The active participation of consumer in the process of production and consumption, is perceivable in both the online world than in the offline (the progressive spread of mobile devices and the pervasiveness of the network on the everyday make this distinction less and less possible): we think to simple operations how to withdraw money at a cash machine (atm), weighing vegetables at a supermarket or a gas sta-
tion self service, or when using various social media. We read, we write or reshape content, be it text, audio or video material, in other words we work on different kind of conversation building relationship. All these actions have an impact on which is perceived as the production process, and the process of consumption, reshaping the centrality of the figure of prosumer introduced by Tofler, (Tofler, 1980 – Ritzer 2009).

Evolution from the centrality of production to the centrality of consumption

The universe of objects has always accompanied the existence of human beings, marking occasions, ceremonies and the most significant moments of their lives. But there are differences between traditional societies and modern Western society, and these differences affect the processes of consumption. In fact, only from the modernity we found a type of society that, following the birth of capitalism, considers the acquisition of property a real act of consumption, and from here we go.

In outline it can summarize the evolution of society, from centred on production to centred on consumption, observing in parallel with the concept of social membership. It is in fact historically evolved from a traditional society, where the central structure was the family, clan, group of reference that dictated the membership, to a functional type (see Luhmann, 2002), in which the professional status becomes a sign of distinction and belonging. This step can be read in parallel with what has sanctioned the transition from a rural society to an industrial society. The further step occurred recently and is the transition from an affiliation generated by profession to an affiliation dictated by styles of consumption. Societies are considered not only for what are capable to produce, but more for their ability to consume and how to consume it, consumption becomes in our times the main aggregator for identity: styles of consumptions are often cross over the traditional social classes. As Mary Douglas points out, “the essential function of consumption is its ability to give meaning” (Douglas, 1996, p. 68).

“Terms such as product and production are typical terms of modernity and are attached to a model strongly linked to social differentiation, which is based on differences of class and on membership” (Ritzer, 1990).

Within modernity frame the social role of an individual is given by his profession, and his the salary provides the opportunity to purchase goods that make him to belong to a particular class characterized by having homogeneous characteristics and consumer preferences.

Today things have changed, the consumption has become central to production, consumption become, in the post-modern era, the lead agency of socialization regarding the acquisition of a status.

The status is no longer given on what is produced or by tasks accomplished within a particular structure, but rather on what you consume, from which goods are purchased and the use made of them. Di Nallo infact argues that in Western society may, may be not all produce, but certainly everybody consume (Di Nallo, Galli, 2006) (this at least before the recent and severe economic downturn which hit global markets).

The evolution of the economic cycle is explained by Pine and Gilmore (2007) showing that historically has been a shift from a historical phase of an economy based on commodities (they mean with the term natural resources freely available), with a focus on products then on the services until you get to an economic stage based on what they call “experiences”. The experiences are the cornerstone of the consumerist society, as well as the products were for the industrial society and the natural resources for rural society.

In the contemporary socio-economic context commodities no longer exist: such as air, ideally inalienable natural resource, now has its own market and its price, tickets for entry
into the historic centers of cities with the cars, or the airflight carbon tax, are nothing else than the transposition of the concept of purchasing a quote to pollute air meant as a good instead of a commodities. Even products, especially after their digitization, gain new and different meanings, as well as new and different uses, shifting attention from the centrality of the industrial production value, to emotion linked to them: for this reason, Pine and Gilmore (2007) argue the centrality of the experience that is lived through the product-services.

The futurologist James Ogilvy observes in fact that “the growth of industry experience is a sign that the market is saturated with stuff produced by the industrial revolution” (J. Ogilvy, 1990, p. 14).

Experience as such can not be built exclusively at the central level to be perceived as such, and especially as authentic. The element of authenticity seems to be the new discriminating factor as regards the determination of the value concept in the perception of consumers. The authenticity becomes an element constructed collectively in synergy between the instances of production and consumption, creating a circular relationship in which, for some, could take place, at least in theory, an increase power of consumers, according others, could generate new forms of exploitation of consumers.

Also must be stressed as from the late nineties onwards there has been a phenomenon known as marketing divide, which suggests a gradual decline over time, of trust and attention that consumers reserve at corporations and advertising communications.

The hectic contemporary lifestyle and the multi-presence allowed by modern communication tools make the time progressively reduced in functional units, not more dedicated to classically designed laziness, but to the *Otium* even when you are dealing with recreational activities.

The attention of consumers falls off mainly because of the omnipresence advertising community, which now seem to merge into a diffuse background noise. To this must be added the loss of credibility due to numerous scandals in a global level that involved corporations owners of the most advertised trademarks.

Conversely consumers are confronted with an unstoppable opportunity to choose products of all kinds and varieties accompanied by an exponential growth of possibilities to communicate or make their voices heard.

It creates so, at least in theory, a reversal of perspective: from a consumption predominantly controlled by the market and production, to one controlled by the consumer, not necessarily driven by its needs, as we thought in the theories of marketing classic, but rather by his emotions.

**Web 2.0, the beginning of a process of involvement and awareness**

The evolution of consumption behaviours described above was made possible primarily through the diffusion of digital infrastructure now defined, with a heavily abused terminology, with the name of Web 2.0. If, in a sense, the digital revolution, even the first generation, has began to transform, into the sphere of consumption, the perception of space, time and properties, is with Web 2.0 and the so-called social network that we attend to the wide diffusion of these concepts previously only theorized.

---

44 O Reilly defines Web 2.0 as a “set of economic trends, social and technology that form the basis for the next generation Internet a more mature and separate medium characterized by users’ participation and the opening and effects of the network”.

---
“The Web 2.0 is basically a philosophical approach to the network that characterizes the social dimension, the sharing of authorship than the mere use: although from a technological standpoint many of the tools of the network may appear unchanged (like forums, chats and blogs that “pre-existed” back in web 1.0) is precisely how to use the network to open new scenarios based on the simultaneous presence in the user of the ability to enjoy and to create / edit the content media”.45

For this analysis, what matters is not so much consider the evolution from the standpoint of technology, but how this change has impacted on behaviours related to the relation of production-consumption; conscious that the term is extremely used and that probably in a very few years will be forgotten, however, we focus on one aspect which we consider essential, namely the transition from a web as it were static to a dynamic one, by an informal network to a network of relationships, believing that in this aspect should be researched for the centrality of the innovative scope of the instrument.

At the theoretical level the greatest innovation made available by this type of technology is the ability for users to publish and share content of various types, text, video, audio, with a single individual, small group or even the whole world. The global spread of social network sites, from MySpace to Facebook just to quote a few, is at the centre of the concept of social networking, “a social network consists of any group of people linked together by different social ties, ranging from casual acquaintance, to work relationships, to family relationships”.46 This concept is crucial in Joi Ito to explain how through these networks is now possible to speak of an “emerging democracy” (Ito 2004).

From a consumeristic standpoint, this means that in theory, consumers have the opportunity to interact and converse with the system of production in a more horizontal way, they can criticize, comment or endorse in relation of the decisions proposed by the marks: the action of consumers can expressed in several points of view and not reduced to the decision to buy or not buy a product.

The conversational nature of the interactions of consumption in the network ensures an the horizontalisation of the power relationship between producers and consumers, and simultaneously allows to the system of production to involve their consumers in a constant manner, within the process of design creation of product.

A lot of marketing strategies today require the active participation of so-called end-user in building the product, making use of consumer skills, which are made available in a free and voluntary way. Such capabilities may be at low added value, consider, for example, carriage or mounting an IKEA furniture, weigh fruit vegetables at the supermarket or buying the train ticket or a flight check online; others examples may be at high added value, we think such as all activities hacking of video games or mobile phones, often used by those industries to identify flaws or defects in products or in all those activities in which the consumer re-interpret, to quote the words of Lessig (2008), remixes and diffuses, content of various types, generating an increase of collective value.

The Remix Culture47 is based on the idea of creating something new from a product already exists, and reinterpreting it in a different and personal way. Given this new phenomenon of egalitarianism, consumers are, in the meantime, producers. Through blogs and social

---

45 http://it.wikipedia.org/wiki/Web_2.0.
46 Ibidem
47 It consists to cut out, overlap and mix of content to create something new.
networks you do have a space for expression, at the same time public and private, needed to put an emphasis on topics of personal or collective interest, being both a transmitter and a receiver within a global discourse.

The communicative and pyramidal logic that saw at the summit the label, then the product and then the consumer becomes in a 2.0 perspective, towards a logic more oriented to a network in which each element of this discourse is a node affected and influenced by the other. Jenkins introduces the term cultural convergence as “the collision of different media old and new, more as a cultural need that as a technological choice” (Jenkins, 2008). Convergence represents a paradigm shift, increased interdependence of communications systems and a manifold mode of access and content use, the main consequences of which affect the dichotomous relationship between:

- Producer - Consumer
- Professional - Amateur
- Mass media- Personal media

Convergence means that the boundaries between these concepts are increasingly blurred so much that it could no longer speak as if they were pure concepts.

The gradual disappearance of a sharp cut boundary implies a significant impacts also on the concept of market: as argued by Anderson (2008), is undergoing a transition from mass market to a mass of markets at least in theory, for which all digitized products are potentially profitable alike, whether they sell a single copy to millions of people, whether they sold millions of copies to a single person. To better understand this phenomenon, called “the long tail” (Anderson, 2008) is good to explain how the author studied the consumption of music online has come to argue that in this context, it is not so important if the store's virtual music sells the same copy of the song by Michael Jackson to thousands of different people, or sells thousands of individual copies of different niche songs to thousands of different people, the result will still be the same economically speaking. At the theoretical level that explains how a market made up of hits, or mainstream products, is equivalent to one made of niches.

On this trail Kelly (2008) argues that the functioning of the Internet and digital products work like a huge photocopier, in the sense that, once digitized the product exceeds the laws of physics and can be replicated at virtually no cost countless times, so if in the industrial society, the scarcity is the generating element of value, since it is expensive to produce copies, in contrast, in a digital society, being the cost of the copy (except the first one) almost nil, we are witnessing a shift in the concept of value towards intangible elements, such as trust and / or reputation.

In this area it are playing an important competition between consumers and producers, just think of the publishing market and the phenomenon of citizen journalism, political debate and the blogs (the Obama campaign was an example of the power that can have conversations from below), or the system of consumption with all the news that a dialogical relationship, brand-product-consumer puts on the field.

In agreement with Rifkin (2000), Kelly (2009) argues that the traditional concept of property loses its importance when an asset is dematerialized “spread fragments of memory”, it obeys in fact to the new proprietary dynamics.

Today, consumers have a wealth of opportunity to produce content of any kind, and of cooperation with the system of production, the kind of society that Lessig is talking about is the remix one, and he refers to a society that encourages the production through the participation and cooperation.
Markets as conversations

It seems interesting at this point to dwell on the interpretation that the world of marketing, through the Clue Train Manifesto (Levine, R. et al., 2001), offers about the market. What is crucial is the concept of the market as «conversation between human beings, made possible thanks to the Internet. Through this tool, you can talk to a different level compared to previous eras and previous media, these networked conversations are enabling powerful new forms of social organization and knowledge exchange to emerge, as a result, markets are getting smarter, more informed, more organized» (Levine R., et al., 2001).

The market is then understood as the set of people, relationships that they establish, their dialogues and their conversations: the whole creates the true knowledge of the contemporary world, the true wealth and the element determining of our society, which is now constituted by intangible assets, but not for this less relevant and important. In this sense we can speak of a knowledge space, an open space where everything (and everyone) converge in the pursuit of multiplicity and prosperity in a continuous exchange of expertise and knowledge. These exchanges now become the source of innovation that the market itself generates.

The logical evolution of the term prosumer is what Bruns (2008) defines as pro user, referring to a consumer, producer and user of a resource: in this perspective the good is not considered a complete resource in itself, but that requires continuous implementations.

Technology shapes the way people communicate and relate each others and as a consequence also some of the laws that drive the markets. Especially considering that consumers are active online and have a profile on a social network, we are not talking of just passive consumers but of active users, or participants we might say. Speaking of pro use, do not put just a taxonomic problem, but is an attempt to free consumers from the shackles of the finished product and of exploitation (Bruns, 2008).

Take as example a song remixed, or Wikipedia, we can see the distinction between the concept of production and consumption is fading. We are in fact facing a continuous process of modify and revision: in the case of Wikipedia there was a continual sense of construction and expansion of knowledge, which blurs the line between production, consumption and use, a phenomenon defined by the term pro user.

Be considered, however, that the pro user is possible only in view of the excess of material production characteristic of modern society.

The capital is moving away from its material origins to become something increasingly bound by time and experience:«when everything becomes service, capitalism is transformed into a system based not more on exchange of goods but on segments of experience» (Rifkin, 2005). It is understandable then why Rifkin talks about an economic system increasingly intertwined with the cultural system: in fact it produces experiences, values, culture, opportunities that the subjects utilize for their own training. «So it is the production of signs and symbols that constitute the new wealth for business! The new capitalism seems so much more connected to the time that the matter » (Rifkin, 2005).

The same system of production, in fact (not just the whole economy) is more lightweight and flexible, thanks to modern technology and new organizational models: think in this connection to the Internet, network, how it has modified the relationship between producers and consumers.

Fading out of roles, from prosumer to pro user

The term introduced by Alvin Toffler (1980) appears clearly in the early eighties as a fusion between the words producer and consumer, and although it can take on different mean-

ings depending on context of reference, it indicates the figure of a consumer who takes an active part in production process with its business, both of material and symbolic kind.

Originally referred only to a recreational process of customizing products, but over time has increasingly focused on the high level of specialization that have gained leisure time activities: often the fans in many areas, are in fact be specialized to a very higher level than the amateurs, so as to acquire specific skills in high level, similar to those of professionals, confirming the claims by Jenkins with regard to the convergence between professional and amateur.

The passion and the level of emotional involvement that an amateur puts into its work enabling him to acquire knowledge and specificity typical of those who perform the same tasks as a profession: so it happens that the level of dedication to music, mechanical skills, computer skills or specific a given field are shared and disseminated within groups structured according to logical that Maffesoli (1996) would define Neo-tribalistic because it does not specifically placed in a precise space-time, but dense of a high emotional relational value.

In this tribe, were claimed by Godin (2008), can be considered as a group with a common interest, linked together by a collective way of communicating, by a leader, and an idea, just as happens within the various social network sites.

In this perspective a tribe, were claimed by Godin (2008), can be considered as a group with a common interest, linked together by a collective way of communicating, by a leader and an idea, just as happens within the various social network sites.

The subject is now at the same time a consumer, producer, director, designer and purchaser because he has acquired knowledge and expertise from which the company can learn a lot: the latter evolves now in parallel to its public.

Using as model Wikipedia and Web 2.0, Tapscott and Williams (2009) speak of “peer production” and “Wikinomics” as a metaphor for new way of thinking in the economy and society, in which the values of sharing and collective participation constitute the engine of trade. Wikinomics is the world of collaboration, community, self-organization that are transformed into collective economic strength of global dimensions. This new participation "peer production" is changing the way goods and services are invented, produced, marketed and distributed globally.

This approach is likely to offer an overly optimistic view of capitalism and collaboration of digital mass: the neo-Marxist approach, however, while recognizing the potential for alternative development, sees what is described by Tapscott and Williams as an increase of alienation and exploitation.

The paradox of contemporary informally capitalism has already been made by Marcuse when he spoke of how the no-freedom subjective was accompanied by the highest potential for emancipation of humanity.

This paradox, which is shared by Fuchs (2008) leads him to argue that the current economy 2.0 can be defined as gift commodity internet economy (commodification of the gift in the internet economy): it is generally made up of services that are provided without any need to exchange money, because people base their logic of return on the collective value that each person can bring to the system, as well as through the sale of advertising space and any product upgrades.

This gift economy typical of the Internet presents a double feature of supporting, and at the same time undermining, capitalism of the Information Age.
The term *prosumption* means the creation of products or services made by the same people who will be then also the end users.

There is no doubt that the prosumer at this point has an active role in the production process of the corporations, although the consumer will be the case in an unconscious, or at least gaining an advantage and a relatively small reward for his work.

Currently, the time savings or a small financial saving is the main advantage that the mass distribution offers to consumers that are activated in the process of production to consumption.

So it happens that in front of a consumer who is not fully aware of its role and its strategic importance, many marketing experts have used the opportunity to obtain free labour by consumers (Ritzer 2009) we can add both from a material point of view and from the symbolic point view, consider how consumers are working for free into an increasing quantity of activities within the material production and consumption by a side, and by the other think about how advertising and advertisers are using consumer as testimonials and promoters. Much of the work done by consumers is not necessarily material work, but in parallel with that which is the evolution of consumption, much of the work of the prosumers has an intangible value.

Think about for example a fan of a sports team wearing the colours and logos of his team, a motorcyclist with a Harley Davidson tattoo, any Facebook user or viewer of reality shows: they are at the same time producers and consumers both tangible and intangible value, even for the simple fact that their participation and their emotional involvement creates a process of increase of brand value that are producing and consuming.

Then retrieving the claims made by Pine and Gilmore previously, the consumer experiences can be fully considered prosumeristic activities, because they are relational opportunities which are offered by the use of symbolic values created in synergy between the brands (corporations) and consumers, and that, without the mutual recognition, would only simulacra without any meaning. Share the meanings of the marks means today have access to an imaginary world of shared interests and passions, created collectively by the strategists of the marks, but also by the practices of consumers.

**Participation or exploitation?**

Within the debate in question is right and proper to ask the question of how, and whether the activity of prosumer could fall within a discourse of increased participation of the consumer users who knowingly provide value added to the system of production, or or whether it is a different form of exploitation of what can be defined as “free labor” (Terranova, 2000) in the double sense the term free has.

The term refers to a trend whereby prosumers produce a value of surplus without receiving any payment for their activity. Hardt and Negri (2005) speak in this sense about exploitation of multitudes which producing knowledge as a collective resource of the society.

The so called “free labour” is the work made available to the prosumer for free, but through which corporations earn profits (Fuchs, 2008).

Speaking of *crowdsourcing*, a synthesis of *crowd* and *outsourcing* (the practice of outsourcing certain activities), when the consumer - community members are aware of creating content for business: usually occurs on the right input production system, which is aimed at community indistinct to conduct a task on its behalf.

Internet, by its structural configuration, allows a communication many to many, and a mixture of the figure of the issuer and the recipient in an inseparable unity of prosumer, con-

*Journal of Sociocybernetics, 7 (S) (2009) pp 1-160*
tinuously active that generates, according to Fuchs (2008), is a commodification both of the audience that the prosumer, no longer seen as a process of democratization made possible by the tool through the collective participation, but rather as a process of total commodification of human creativity.

The time spent by users in social networks to generate increases in profit for the corporations that manage the marks in question, as well as help in finding advertising revenue.

The consumeristic social overview is characterized by a network of relationships very similar to the structure of the web, where the brands and products serve as aggregating points, a hub, if we use a term taken from the digital language, in which was realized the shift from ownership to the access (Rifkin, 2000), when the ability to consume and process information becomes the basic requirement.

People as consumers, first among all, have experienced this transformation and they are “anthropologically modified”, adapted to the vital environment, paradoxically, less and less natural and increasingly made up of supermarkets, malls, outlet-centre, products, services, brands, experiences: the consumer has maintained, though not always consciously, the control of the process so that today we can speak of a reversal of roles, the consumer increasingly incorporated within the dynamics of the system, becomes the principal actor in all the processes that go from concept to realization and promotion of products/services dedicated to himself.

The anthropological transformation of the consumer has freed from the role of a victim of the strategies of marks making him, in contrast, a critical observer, observant and educated, so that he become aware that he himself is the one through which brands can have a shared meaning and consequently a value: the consumer has also become aware that the marks exploit its ability to produce meaning, but he accepts it willingly (Ritzer 2007).

A consumer constantly looking for something, not products, not services, but through the same of putting into practice a emanationist philosophy, that leads them to discover the last essence of being as claimed by Campbell (2008).

In this game of search and sharing of meanings, however, the consumer must face the transformations of the two fundamental dimensions of existence, space and time, which are also the cause and effect of change in society and the sphere of consumption.

References
Anderson C., 2006, The Long Tail: Why the Future Business is Selling Less of More, Hype-
rion, New York.
Campbell C., 2004, I shop therefore I know that I am: the metaphysical basis of modern consumerism, Elusive Consumption, Berg, New York.
Fuchs C., 2008, Internet and Society, Social Theory in the Information Age, Routledge, New York.
Godin S., Tribes, We Need You to Lead Us, Portfolio, New York, 2008.
Terranova T., 2000, Free labor: Producing Culture for Digital Economy, Social Text, 18 (2).
The ‘Participatory Culture by HENRY JENKINS: An Empirical Reflection on Social Network Sites

Author: Tatiana Mazali
t.mazali@uninettunouniversity.net

Individuals and groups ‘perform’ themselves using social network sites (SNSs). Their profiles on SNSs give them the opportunity to ‘put to the test’ their identity and their representations of themselves. But the social network space is not only a space for representation, it is a space of performance that means construction, it is a space of social construction of one’s identity, it is a relational space in which, primarily, ‘we act’ and ‘we produce’ (examples of acts and its products: texts/speeches, photos/memoirs, videos/actions, audios/preferences).

I use the term performative to put the accent on the dynamic and processual aspects that arise in such contexts. (For the discussion on the theoretical frame of the performance studies, see Loxley, 2007 and Auslander, 2003). The ‘we act’ bit of the performative side of everyday life finds in the social networks of the Web a ground for experimentation and creativity.

My contribution focuses on the framework that Henry Jenkins defined as ‘participatory culture’ to better explain the new socio-cultural frame in web 2.0.

Starting from this concept, my text will present the initial results of an on-going empirical research conducted on social network spaces that uses a combination of several ethnographic methods, which include semi-structured formal interviews as well as analyses of videos and images, comments.

The research is being conducted inside the PRIN-National research project “CoOPERARE-Content Organization, Propagation, Evaluation and Reuse through Active Repositories”, supported by the Italian Ministry of Education, University and Research (Research groups involved: Politecnico di Torino, Università degli Studi di Napoli Federico II, Università degli Studi di Bologna, Università della Tuscia, Università degli Studi Roma Tre. National Scientific Co-ordinator: Professor Mario Ricciardi).

Some important and emerging issues

The passage from interactivity to participation

In the early nineties sociological and technological analysis and theories put the accent on the Internet and Web technologies as generators of interaction (from person to machine, from person to person). Interactivity emerged as the characteristic that better explained the difference between mass media and new media.

With the pervasiveness of the Web’s social spaces (like the virtual communities, chats, forums), we have shifted from the ‘interactive’ to the ‘relational’ key-concept. The Web as an interactive space gives way to the Web as a relational space. The current SNSs bring to completion this passage: from ‘interactive’ to ‘relational’, from ‘relational’ to ‘participatory’.

Jenkins (2006a) defines the different typologies and patterns of ‘participatory culture’ as follows: Affiliations, Expressions, Collaborative Problem-solving, and Circulations.
Affiliations — memberships, formal and informal, in online communities centered around various forms of media (such as Friendster, Facebook, message boards, metagaming, game clans, or MySpace).
Expressions — producing new creative forms (such as digital sampling, skinning and mudding, fan videomaking, fan fiction writing, zones, mash-ups).
Collaborative Problem-solving — working together in teams, formal and informal, to complete tasks and develop new knowledge (such as through Wikipedia, alternative reality gaming, spoiling).
Circulations — Shaping the flow of media (such as podcasting, blogging).

Participation patterns, actions, shapes and habits live in and give life to the World Wide Web 2.0.

Rheingold (2002) anticipated this scenario with his definition of smart mobs: “Smart mobs consist of people who are able to act in concert even if they don’t know each other. The people who make up smart mobs cooperate in ways never before possible because they carry devices that possess both communication and computing capabilities”.

Smart mobs, which are social mobile networks ad hoc, represent a dynamic sociality, nomadic in mobility, a hybrid structure of social interaction — both face-to-face and virtual —; they are not only a virtual community but a social network, not only a class but a ‘mob’, a dynamic and always changing agglomerate of people made aware through and by the technologies it uses.

The SNSs, primarily organized around people and not interests (as Friendster and Facebook), represent both a continuation and a further step of this concept, a cause of the new strong relation, inside SNSs, between virtual and real communities. On many of the large SNSs, participants are not necessarily networking or looking to meet new people; instead, they are primarily communicating with people who are already a part of their extended social network (Haythornthwaite, 2005; Boyd, Ellison, 2007). Current research suggests that both strong and weak ties are sustained on SNSs (Boyd, Heer, 2006; Lenhart, Madden, 2007).

The ‘participatory culture’ of the SNSs invites us to redefine such terms as virtual vs. real world, online vs. offline communities, strong vs. weak ties.

The passage from production to participation

SNSs have introduced a new organizational framework for online communities, they have introduced different Uses and Gratifications (see Blumler, Katz, 1974) in the practice of online social spaces.

Early public online communities (and actually websites dedicated to communities of interest), were structured by topics or according to topical hierarchies, but social network sites are structured as personal, with the individual at the center of their own community and networks. Some SNSs are centered on the production and sharing of specific media (Youtube, Flickr), we can say that they are media-centered; some others are persons-centered or ties-centered (as Facebook).

The question is: how does the ‘production’ level (user generated contents) link to the construction of networks and to participation levels?

On one hand, the most popular media-centered networks, like Youtube and Flickr, seem to follow the logics of specialisation according to the media, and do paradoxically become single-medium spaces. Apparently their main success is to act as platforms for distributing and sharing specific media contents — videos, photographs, music — and these might range from
maximally public to maximally private and limited to a narrow circle of friends. Even if they do allow the discussion on the uploaded media contents — with the comments, the voting, etc. — on this type of platform the media in question is and remains the main protagonist.

On the other hand, the most popular persons-centered networks, like Facebook, which give priority to the individual and his/her social network, are becoming more and more omnivorous platforms that assimilate an ever increasing number of features and services (see Grivet Foiaia, 2007). And this is mainly due to the new logics of production of the Web 2.0, based on the strategy of the incomplete releases and on the grassroots communities of developers. (Facebook makes a point of inviting such communities to actively participate, and day after day these program new applications for Facebook — see the ‘Developers’ section on its homepage, which directly links to a space dedicated to “Build social applications on Facebook Platform”, http://developers.facebook.com/?ref=pf).

It is obvious that the very pillars of the cultural media industry of the XXth Century are being brought into question (see Colombo, Eugeni, 2003): we are talking about the figures of the producer and the consumer, and also about the concept itself of media ‘production’ and ‘product’.

The productive aspect, clearly recognisable in the expression user generated contents, collides and interacts with the participatory and constructive aspect of the social networks, clearly defined by Jenkins under the term participatory culture.

A participatory culture is one in which the members believe that their contributions matter, and feel some degree of social connection with one another.

The ‘feeling’ of social connection may correspond to strong social links, as it is the case with a real and already steady group of friends, a group that existed prior to the network on the Web. But it may also correspond to weaker links, often due to the mere fact of paying attention or giving importance to what other people think about the contents that we have created and shared on a particular network; what the others think about what we have done is important, and what we have done is more and more often the ‘production’ of something — that ranges from a personal profile to proper media products.

We are confronted with a new and complex scenario of uses: there is a new order and relationship between the consumption styles/levels, the contents management and the new interpretations and social uses of the media.

The term prosumer has now become a broadly accepted and used expression. It is a neologism created by Alvin Toffler (1980) to designate this new figure of a consumer-producer of media contents that acts independently of the media mainstream. Nevertheless, I will rather refer to these ‘new’ consumers with the term coined by Mario Ricciardi: outsiders. As opposed to the word prosumer, which makes a neutral picture of the situation (the fact of overcoming with a single figure the historical division between producers and consumers), the word outsiders is full of critical sense and shows the way to a series of profound aspects that characterise the tendencies of whole new generations of consumers (Ricciardi, Bossi, 2009).

The statistics data leave little doubt: today the quantity of information produced by the consumers is higher than the one generated by the big networks (Lyman, Varian, 2003; Saracco, 2005). Nevertheless, according to the most recent research results on that matter, it turns out that the so-called strong ‘active users’ (those that do not restrict themselves to a navigational interactivity, but produce and upload contents of their own) might be an indeed interesting group but, at the same time, they represent a minor percentage of the huge mass of media consumers (Hitwise, 2007).
In that sense, the different categories of ‘active user’, as defined in the Forrester Research *Social Technographics* (2007), might prove very useful. They were established in accordance to the activities really developed by the users on the Web 2.0 platforms: creators, critics, collectors, joiners, spectators, and inactives.

These new practices of individuals and groups reshape the dimension of the producer/consumer and that of the media product too. The questions are now: does participate mean produce? What is the new extent, and the consequences, of this participation-production. Participatory culture shifts the focus of attention from individual expression to community involvement. Web social network spaces are an excellent field of investigation to analyse the dynamics of collective elaboration of that representation of the community that goes directly to the heart of image and awareness production: the social and collective practice. On the Web 2.0 platform, especially in social network sites, it makes the transition from imagination to action; we pass from a representational space to a relational and performative one.

**Methodology of the research**

My ongoing research is conducted in the frame of a PRIN-National research project: “CoOPERARE-Content Organization, Propagation, Evaluation and Reuse through Active Repositories”. The purpose of the CoOperare research program is the analysis of the Web 2.0, with special focus on its treatment of the Cultural Heritage. With this aim, we have chosen a sample set of Italian Cultural Monuments/Museums and we shall compare the institutional discourse related to them with the user generated Web discussions that also refer to them (on the social network platforms, blogosphere, Flickr and such). The Cultural Heritage consists in 15 brand name museums, as defined by the Touring Club, that is: National Museums with more than 500,000 visitors in 2007 (Source: TCI Research Centre, 2008, Museum Dossier 2008).

In this context, the personal contribution that I shall outline in this paper will focus on the analysis of the user generated photographic contents to be found on Flickr.

In addition to the analysis of the visual contents (and this term refers directly to the theoretical and methodological frame of visual sociology, in which I have chosen to develop my research there is a crosscheck analysis of the textual contents, so that the final set of snapshots of the Cultural Heritage may recover the multimedia aspect that characterizes the Web.

My research methodology is based on an interdisciplinary approach, for which the research group of Politecnico di Torino, in which I work, also collaborate with researchers of the Informatics Department of the Università degli Studi di Torino and the Università Federico II di Napoli. This collaboration is allowing us to test new research methods, be it in the delicate field of data and information sampling inside the Web 2.0 universe, or in the field of result processing, typical of the final stage of a research project (like it happens, for example, with the visual methodologies that we know as "visual narrations" — see Faccioli, Losacco, 2003).

In close collaboration with the Informatics Department's researchers (for a general overview of theirs project's fields of research see: Candan, Di Caro, Sapino, 2008a; Candan, Di Caro, Sapino, 2008b), we are applying to the specific field of Cultural Heritage a new system of investigation/organisation/semi-automatic analysis of textual and visual information. This system has two different approaches:
Phase 1: Top-down — A deductive approach in the samples selection and in their first classification. The starting point is the establishment of the general taxonomy that defines the Cultural Heritage domain. The entries of such taxonomy are the search keywords used when selecting the data sample inside a specific Web 2.0 platform (in this case: Flickr).

<table>
<thead>
<tr>
<th>TAXONOMY Italian Cultural Heritage domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Galleria dell’Accademia di Firenze</td>
</tr>
<tr>
<td>Galleria degli Uffizi</td>
</tr>
<tr>
<td>Museo Nazionale di Castel S. Angelo</td>
</tr>
<tr>
<td>Galleria Borghese</td>
</tr>
<tr>
<td>Museo di San Marco</td>
</tr>
<tr>
<td>Musei Vaticani</td>
</tr>
<tr>
<td>Palazzo Ducale di Venezia</td>
</tr>
<tr>
<td>Museo Nazionale del Cinema</td>
</tr>
<tr>
<td>Opera di Santa Croce</td>
</tr>
<tr>
<td>Bioparco di Roma</td>
</tr>
<tr>
<td>Acquario di Genova</td>
</tr>
<tr>
<td>Scavi di Pompei</td>
</tr>
<tr>
<td>Museo centrale del Risorgimento</td>
</tr>
<tr>
<td>Musei Capitolini</td>
</tr>
<tr>
<td>Museo delle Antichità Egee</td>
</tr>
</tbody>
</table>

Phase 2: Bottom-up — An inductive approach, intended to typify the features that characterize the chosen field of analysis. This system automatically points out those characteristic features. It allows to individuate, for instance, the underlying keywords in a particular domain, not in an aprioristic or hierarchical way, but from the vocabulary actually used by the Web 2.0 users. What we thus obtain is not a taxonomy as much as a tag cloud of the key words that are recurrent in the Web 2.0 users' language. Those shall then become the search keywords of our analysis on Flickr or any other Web 2.0 platform.

The result of phases 1 and 2 will be a data corpus, that is, our data sample for analysis. But it will also be a first system of classification and semi-automatic analysis for the language that underlies the chosen Web 2.0 milieu.

In addition, phases 1 and 2 provide an excellent opportunity to put side by side two different methodologies of data sampling, a deductive one and an alternative one, which allows to test new research hypothesis based on a grounded theory. In the first case, we get a data sample from a taxonomy, that is, from a prior ‘hypothesis’ established by the researcher according to his observation of the environment to be analysed. In the second one, the search instrument can be refined in order to bring to surface, from the real grounding basis, the most characteristic features of the communication that flows in the Web 2.0 platforms. These features, generated by the Web 2.0 users themselves, can later be developed by the researcher into concepts and categories of a new theory, or simply used to revise and correct the original hypothesis, just as suggested by the grounded theory approach.
The Cooperare’s System Multimedia Taxonomy

To assemble a data sample based on the photographic images of Flickr, I have used an experimental method developed by Antonio Penta, researcher on Informatics at the Università Federico II di Napoli. This method consents to:

- extract images in accordance with the criteria of relevance assigned to Flickr, by using the keyword taxonomy already explained and on which the research is based. The system allows to gather not only the pictures, but also the whole set of entries related to it (that is: title, description, tag, author if mentioned, etc.);
- save the images in a local database;
- ‘search’ the database to analyse the data sample, according to some characteristic visual features of the photographs.

By means of this method, we have completed a semi-automatic scrutiny based on statistics. We have measured, in particular, the degree of similarity among the pictures of the data sample (similarity of the pictures grouped under each taxonomical keyword, similarity of every single picture in comparison to the whole sample, general index of similarity, etc.) plus, obviously and symmetrically, the degree of difference or non-resemblance.

The similarity between two given pictures is estimated by comparison of the four main features that define their visual characteristics: colour, shape, texture and spatial relation. The action of weighing them up can be fine tuned in order to give more importance to a particular category. The goal of this examination is to point out possible recurrent features in the production of user generated contents, or, as it may be, to assess to which extend these ugc tend to adopt autonomous and ‘individual’ forms. Resemblance/Difference become thus a first quantitative index, from which to build later on a qualitative analysis of the pictures.

The final goal of this research is to compare the images and the contents produced by the stakeholders of the Cultural Institutions (that is, the realm that in the cultural industry is defined by the figure of the institutional ‘Producer’, who in turn employs professional ‘Producers’ to elaborate the Institution’s own media image) with the images and the contents produced by the new users of Web 2.0 social networks (that is, the Prosumers or Outsiders).

It is with this scope that we are working on a model of multimedia contents comparison, which shall bring together the scripts and features of the Web’s communities (the grassroots Producers) and those of the official sources (the institutional Producers). By doing this we intend to answer the questions that have originated this research project, not focussing on a detailed and in-depth analysis of a few data, but rather on a very wide data sample inside a huge environment of similarities and differences between institutional and user-generated contents.

Firsts results of the research on the Flickr pictures

I shall now present some results and comments over the first investigations that I have completed. They focus on the inner degree of resemblance of the images grouped in macro areas that correspond to the 15 museums of our Cultural Heritage specially chosen for this study: Galleria dell’Accademia di Firenze, Galleria degli Uffizi, Museo Nazionale di Castel S. Angelo, Galleria Borghese, Museo di San Marco, Musei Vaticani, Palazzo Ducale di Venezia, Museo Nazionale del Cinema, Opera di Santa Croce, Bioparco di Roma, Acquario di Genova, Scavi di Pompei, Museo centrale del Risorgimento, Musei Capitolini, Museo delle Antichità Egizie.
In every single case, we have gathered an amount of pictures up to 500 items. The resulting data sample contains 4,188 pictures.

The following bar charts summarise the similarity degree of the images, according to the four parameters of comparison (colour, shape, texture, spatial relation) applied every time to a pair of pictures (the first one with the second one, the first one with the third one, and so on, for all the pictures in a macro area). Some of the results will not be shown because they have not provided a significant number of images for the statistics, which is probably due to the use of a keyword that did not comply with the vocabulary of the Web 2.0 users (for instance, the “Galleria degli Uffizi” is better known as “Gli Uffizi”, the “Museo delle Antichità Egizie” as the “Museo Egizio”, the “Bioparco di Roma” is simply the “Zoo di Roma”; searching pictures only with the institutional name of the monument can the cause of the low number of results; and this allows me to insist on the suggestion, when working on the Web 2.0, to use keywords obtained from a previous study on its users’ vocabulary, in order to bring together the rather institutional words with those employed by the actual users).

According to the results, the Scavi di Pompei, the Galleria Borghese and the Palazzo Ducale di Venezia are the national monuments with the highest values in the averages of image simi-

---

48 Note on the methodology: in the bar charts, the x-axe corresponds to the resemblance values; to enhance readability, these values, ranging from 0 (maximal difference) to 1 (equality), have been multiplied by 10 and therefore range from 0 to 10; the y-axe corresponds to the number of pairs of images brought to comparison; when the figures are considerably high, they have been substituted by numbers from 1 to 5 to be multiplied by 10 to the fourth power, as specified.
larity: 0.65 for Palazzo Ducale di Venezia, 0.64 for Galleria Borghese, and 0.63 for Scavi di Pompei. In addition, this first group of images has a relatively low coefficient of variation, as a result of the rather compact densification of the values around the latter average figures. As a matter of fact, as opposed to the other image groups to come, their coefficients of variation stay close to 23%.

The Museo Nazionale di Castel Sant’Angelo, the Musei Vaticani and the Galleria dell’Accademia di Firenze are monuments of the Cultural Heritage for which the images produced by the Flickr users have lower similarity averages than in the previous group — from 0.59 to 0.60 — whereas the coefficients of variation — 23% to 25% — tend to be slightly higher (in correspondence with a slightly bigger dispersion from to the average value).

The most extreme case corresponds to the images of another important ‘Museum’, the Acquario di Genova, where the difference levels are the highest and the similarity average (equal to 0.53) the lowest of all the studied Institutions.

There is a third and last group of images that corresponds to the Museo Nazionale del Cinema, the Museo di San Marco and the Musei Capitolini. Their images have the highest levels of deviation from the average similarity value (which is around 0.62): the coefficients of variation range from 27% to 30%. The pictures similarity levels are therefore rather ‘scatered’ over the whole array of values. This pattern can be interpreted as a lack of recurrence, be it in relation to similarity or in relation to differentiation. The high deviation figures indicate an heterogeneous image ‘behaviour’, as if the users that take and upload pictures on Flickr could not be assigned to a particular model and were, time after time, creators of ‘unpredicted’ images (images that do not convert towards a recurrent model).
As a last remark, I find it important to mention that 90% of the images of the whole Cultural Heritage under study never reach similarity values lower than 0.39, except in the case of the Acquario di Genova (where we get to 0.37). This provides evidence that there is not a bold differentiation between the images; in other words, the images never tend to be under a certain level of resemblance.

What does ensure, even if they might be medium-low, these similarity levels? Can the characteristics of the photo-cameras be the cause of a certain standardisation? Let us think of the colour and texture parameters that we use to calculate the resemblance degree: could they be influenced by the photo camera's characteristics rather than by the creative choices of the users-photographers?

**Heuristic hypothesis towards an interpretation**

We can regard the user generated contents as practices of cultural production (in De Certeau's terms, cultural practices by the non-producers of culture) or, using Pierre Bourdieu's words, sets of symbolic practices and materials that make up a differentiated way of life. If we consider them under this light, can we then interpret the ‘resemblance’ in the pictures of Flickr in terms of Bourdieu's concept of distinction? Can we deduce from the results on the degree of resemblance a habitus, common to all Flickr users? Or is Flickr, on the contrary an environment where very different habitus confront and fight each other?
It is obvious that such questions can only be answered by analysing the users' socio-economic and cultural backgrounds as well, in order to identify the cultural, economic and social capital that could possibly generate a common habitus (as a matter of fact, we cannot define a habitus if we do not get to know first an objectively classifiable set of life conditions—see Bourdieu, 2001, p.176).

Even at the risk of being partial and too audacious at this rather early stage of my results analysis, I would like to venture a guess and suggest a line of interpretation that I would not doubt to reconsider under the light of further data. I base this approach precisely on the level of resemblance in the practices involved in producing and sharing photographs. It is important to stress the fact that, in the analysis of Web 2.0 online environments, the practice cannot be reduced or limited to the production of a content, but must on the contrary be examined in the context of its online upload/sharing/communication.

This explains the specific character of the user generated contents, which I suggest to consider as practices of "popular culture" (to use Michel De Certeau's terms): the user generated contents embody a sort of popular culture that, as such, takes basically the form of a 'practical art', or even the form of a consume based on combinations and ways of use. These practices "activate a way of thinking directly applied to a way of acting, an art of combining completely indissociable from an art of using"49 (De Certeau, 2005, p.10). The pictures on Flickr do not represent some practices, they are those practices, they are a "mixture of rites and bricolage, manipulations of spaces and activation of networks" (De Certeau, 2005, p.11), they are the result of a series of patterns (expectation, bargaining and improvisation patterns) that belong to common language.

Consuming always presupposes an act of appropriation. In that sense, the consumer is always, somehow, a co-producer of the product he consumes, since he collaborates to produce it by means of his own effort to find it out and to decode it. The list of social uses can be drawn, to some extent, from the usage instructions of the artifacts and products. But, at the same time and according once more to Michel De Certeau, the consumers operate in the gaps that 'deviate' from the norm and the rules; they operate in a tactical way, they adopt the survival tactics that the subjects of the technocratic power apply with alternative forms of expression; we are talking of practices from the bottom, and this is a very appropriate label for the user generated contents.

As we can see, De Certeau is particularly useful when it comes to pointing out 'deviation' practices, that is, autonomous practices of the consuming/producing subject. He comes hence very handy to interpret my results when there are more 'differences' than 'similarities' between the images— which is the case, for example, with the groups of images characterised by a remarkable deviation from the similarity levels: images of the Museo Nazionale del Cinema, the Museo di San Marco and the Musei Capitolini. Let us make clear that the outsiders' practices do not subvert nor change the rules of the instruments and products; they rather use them in a particular way and with a scope that is alien to the system, a system from which they cannot escape. In De Certeau's words, the prosumers dodge the system but do not break away from it. They are a 'marginal' group inside the majority.

In my research, though, I see the convenience to use, as well, Pierre Bourdieu's interpretation key for the practices of everyday life, in which he includes the consume of cultural products. In opposition to De Certeau, Bourdieu proposes a model for the cultural system based on a cause-effect dynamics between the individuals’ capital or, better said, between the (domi-

---

49 Translated by the author (quotations refer to the Italian edition of the book).
nant, medium, popular) classes’ capital and the practices (the *habitus*) of taste (distinction) that lead the consume. In that sense, the practices of consume would be the result, the externalisation of an acquired experience, which has its roots in the internalisation of the profound structures that characterise one’s own social class (where it is the specific cultural, economical and social capital that makes the difference from the rest). Hence, coherence and stability are the characteristic features of Bourdieu's *habitus*, which we could also call *ethos*, *modus operandi* or ‘common sense’. That is why Bourdieu can help to understand the results of our research that have to do with the ‘similarity’ between the pictures, since this implies a coherent and recurring model — as happens, for instance, with the images of the first above mentioned group: images of the Palazzo Ducale di Venezia, the Galleria Borghese and the Scavi di Pompei.

The question to be answered becomes then: which is closer to the practices of Web 2.0 users, De Certeau's concept of tactics or Bourdieu's concept of strategy? Does a Flickr user act by tactics or by strategy? In other words, are the practices of the Flickr users systematic or not? Can we trace in them a habitus ("a principle that unifies and generates all the practices", Bourdieu, 2001, p.179, who adds: "it is an incorporated necessity, transformed in an attitude that generates practices endowed with a particular sense […]; being a general and conveyable attitude, the *habitus* engenders a systematic and universal application", Bourdieu, 2001, p.174)?

What makes tactics different from strategy is that tactics are a-topic; they do not have a place, at least outside the subject. They depend on the moment. They can thus ‘catch on the spot’ and constantly play with the circumstances to transform them in ‘occasions’: "lacking a place of their own, being short of global vision, being blind and shrewd like a hand-to-hand combat, tactics are determined by an *absence of power*, whereas strategy is based on the premise of power" (De Certeau, 2005, p.74).

The problem is that tactics do not keep what they conquer, as De Certeau puts it. If we adopt this point of view, we may tend to consider the *user generated contents* not as a well-structured stream anymore, but as a series of suggested decisions, acts and ways of grasping the occasion. Nevertheless, in spite of seeming aleatory and unpredictable, tactics do have permanent and unchanging qualities that are compatible with their improvisation and ‘deviation from the norm’.

Should these continuity and invariability traits lead us to follow Bourdieu and see Flickr as a territory that replicates the organisation pattern based on class differences? Even if still at an early stage, my research tries precisely to spot and identify these consistent and unchanging features, that is, the ‘common’ practices that result from the sum of many particular experiences.

There is a third and last theoretical frame that could help us interpret the results: Erving Goffman's model of the "dramaturgic teams" (Goffman, 1959). Goffman and De Certeau have in common their micro-sociological approach and their interest in everyday life, but they diverge in the aspects on which they finally focus: De Certeau spots the ‘deviations’ form the routine, the acts of freedom, whereas Goffman emphasizes the recurrences, the permanent rituals. For Goffman, first comes society, then comes the individual (the self is not inherent in the person, it emerges from a social condition). That is why Goffman talks about strategies (like Bourdieu) whereas, on the contrary, De Certeau talks about tactics. For Goffman the individuals' practices are *socially imposed* and *regulated*.

---

50 Translated by the author (quotations refer to the Italian edition of the book).
I find particularly useful Goffman's concept of the "performance team": a group of individuals that collaborate in order to stage and perform a single routine. The team's action belongs to a third level, placed midway between the individual performance and the complex interaction of the whole set of participants. In a team performance, there might always be someone that causes the whole show's failure by a wrong action. Every single team member has to rely on his colleagues' good conduct. In a social system where the team members have a different status or class, the fact of belonging to a single team can probably make them overcome structural and social divisions, thus helping to the general coherence.

Can we then consider the Flickr community as a team in Goffman's sense? Is it right to talk of a community, that is, to talk of common practices in a context of overwhelming distinction and differentiation?

In Web 2.0, distinction might indeed be the factor of integration in the platforms, since everyone is encouraged to create a differentiated and identifiable individual profile. In addition, it seems clear that the online practices of socialisation (management of friends' networks, organisation of private/public contents, netiquette practices, etc.) can be included in Goffman's performance teams model, even if the practices of content production are rather closer to De Certeau's differentiation concept.

According to my first results, the images on Flickr tend to have a medium degree of visual similarity, with value dispersions that depend on every single monument. For instance, the pictures of the Galleria Borghese are homogeneously similar in comparison with those of the Acquario di Genova, which show a bigger dispersion, even in the low figures. As the histograms show, there are recurrent or similar patterns, but at the same time it is not possible to conclude on a clear-cut or single visual model for the creation of all the images.

All this leads me to the following remarks. The first necessary step is to make a qualitative analysis of the photographic recurrences, with an in-depth study of the aspects that deviate from the average (the pictures with minimum and maximum similarities) in order to better understand what De Certeau defines as deviations or acts of freedom. Secondly, another qualitative analysis could use the instruments of visual sociology to focus on the definition of the 'medium degree model' of the recurrent pictures, that is, to focus on that particular habitus which characterises a whole section of the Flickr images.

REFERENCES


Haythornthwaite, C. 2005. “Social networks and Internet connectivity effects”. In Information, Communication, & Society, 8 (2), 125-147.
Shaping the Pop: US Tv Series and Italian Networked Publics

Agnese Vellar
Department of Social Sciences – University of Torino - Italy

In the first decade of the XXI century, the Internet has evolved from a text-based to a cross-media platform where corporation distribute mainstream visual contents. It was also during this time that social media as forums, blogs, and social network site became popular among youth. From the convergence between old and new media emerged a “convergence culture” where mobilized audience compete with corporation in the production of audiovisual flows of contents and participate in the construction of “networked publics” that are digital social spaces and imagined communities. Those socio-technical changes are affecting the way audience communicate with each other and participate in the construction of new social identity.

The aim of this paper is to describe how the contemporary audience shape fictional and audiovisual resources that are available in the cross-media platform. In the networked publics fans of Tv programs appropriate professionally produced contents and pop icons to express their affiliation to a mainstream global culture participating in the construction of a complex social network that I propose to call “starring system”. With this term I’d like to focus on a new dynamic in the networked publics that is the blurring of celebrity (professional) and fan (amateur). In particular I will describe how Italian fans of US Tv series combine the use of social media and the creative remixing of audiovisual contents distributed by US broadcasters to communicate with each other. This process will be exemplified with a case study on an online community of fans of US Tv series: ::Italian Subs Addicted::.

Introduction

Digital or not I am human. And, as a lot of human apart from me (almost all), I communicates. I do that explaining concept with verbal sentences, expressing my feeling with creative use of characters like this: *-----* and representing myself in this way:

Image 1: visual self-representation for a online fan community

Which is the best way to communicate? It depends from the context. For example, if my publics are the reader of this paper, it will be a good idea to write correct English sentences. However, when I chat on Facebook with my sisters I use mainly Italian words (not always
corrects) and lots of graphical signs. Finally, the first time that I had to present myself in an online Italian fan community, I elaborated a graphical avatar and a banner to convey my media interest, hoping to find some like minded people to share my television passion with. My interest in TV programs emerged thanks to the Internet. In fact, since few years ago, I lived in a small Italian village. I didn’t watch lots of television, because I didn’t really enjoy Italian programs. So I used to rent some French movies at the local video shop, trying hard to find some classmate to share my passion with. Then I move to a city, I’ve got a broadband connection, I went online and I funded a digital word where, thanks to the peer to peer networks, I can watch mass media contents in original language and I can spent hours chatting with people about our favourite programs. I get “addicted” to the US Tv series and I became part of the fan culture that emerge around this mainstream genre. I’ve thus discovered the community of ::Italian Subs Addicted:: (ItaSA). ItaSA is a fansubbing community created in the 2005 by a small group of fans of US Tv series to share the amateur subtitle that they produce with the Italian audience. Thanks to them nowadays more that 130.000 Italians that doesn’t understand the English so well can watch the US Tv series in original and at the same time with the US fans. Than I’ve realize that this ItaSA was quite interesting also from a sociological point of view. In fact ItaSA is not just a web portal, nor a simple social group: it is a community. Is it like the small rural community where I born? Not really. The Itasiani, as the members of ItaSA call themselves, lives in different part of the Italy and interact with each other mainly using computer mediated communication channels. When they are sad they put a black avatar in their online profile, when they are exited about an episode of a serie they write that on Twitter : “just watched a fun Bones episode. I adore B&B *_*”.

The member of ItaSA can express themselves using different languages and technologies because we live in a “convergence culture”. It is a culture that emerged in the first decade of the XXI century due to the digital convergence between old and new media (Jenkins 2006a). In the convergence culture entertaining corporations create transmedia storytelling composed by Tv series, cinematic sagas, videogames and online participatory platforms to engage the consumers in a narrative universe. At the same time mobilized audience adopt and adapt digital networked technologies as peer to peer (p2p) networks and social media as chats, forums, blogs, and social network sites (SNSs) to fulfil their communicative needs (Varnelis 2008). Productive consumers remix digital copyrighted material to create amateur products (fanart, fancfic, fanvid) with celebratory as well as subversive meanings (Gallagher 2007). The aim of this paper is to describe how the contemporary audience adopt and adapt resources that are available in the networked digital media to fulfil their communicative needs and how from this communicative process new social identities emerge. In particular I will describe how Italian fans combine the use of social media and the creative remixing of audiovisual contents distributed by the US broadcaster to communicate with each other. This process will be exemplified with a case study on the online community of fan of US Tv series: ::Italian Subs Addicted::. I will describe how the member of ItaSA shape the digital material and the technological affordances that they find in the contemporary mediascape to communicate with each other and how from those communicative practices emerge a collective identity that has the social characteristics of a community.

**Constructing communities and shaping technologies**

Collectives identity have been associated, for a long time, with territorial boundaries. A Nation can be conceive as a linguistic community, as well as a village construct his collective identity thanks to face to face interaction between his members. However communities are not necessarily tied with local affiliations. As suggested by Appadurai (1996) people can participate in the construction of translocal public sphere that can be defined as “neighbourhood” and that has a common history and a sharing perception of the social space, also if the mem-
bers doesn’t share a territory. Media contents and technologies have a grate role in the emergence of collective identities. For example Thornton (1996) describe how in the 1980s youth with a shared music passion for dance music participated in the construction of ad hoc community from which emerge the club culture. It is a taste culture that has a subcultural dimension since the member of the club culture differentiated themselves from the mainstream cultures and therefore developed a form of subcultural capital that they objectified with fashionable haircuts and record collection or embodied with the correct use of slang terms. In the club culture DJs had a grate role on the process of enculturation of the recorded music thus contributing to the authentication of a technology that is now perceived as natural. Also the television fan cultures emerged from the ongoing interaction between fans that share the same media passion (Jenkins 1992). They collaborative developed an “institution of theory and criticism”, that means that they created norm and language to analyze and judge the media programs therefore canonizing a media taste that differentiate them from academic critics. Furthermore the member of the fan cultures are active in the remixing of narrative and audio-visual content that expand the official fictional universe with amateur product as fanart and fanfiction. With the diffusion of Internet fan groups emerge also online. In fact online communities are another example of translocal public shpere that emerge from a common affiliation between people. However not all the online group can be define as a community. In fact a social group can be defined as a community if it has (i) a shared sense of place, (ii) shared identities (regulars, roles, groups), (iii) shared practices (ways of speaking, behavioural norms, power structure), (iv) shared resource (bounding and bridging social capital, social support) and (v) interpersonal relationship (Baym 2010).

In the textual internet the online group were mainly located in a single environment and were identifiable by a URL address. For example fans of a Tv genre, interacting for a long time in the same digital environment as a mailing list or a Usenet newsgroup, participate in the construction of audience community of practice (Baym 2000). If fact “the verbal (and, to a lesser extend, the nonverbal) communicative practices that take form on the group’s messages […] ultimately constructing a social space that feel like community (p. 24)”. Therefore the online identities are socially constructed and negotiated with the member of a group and within a communication technology. Baym thus identifies three dimension that characterize an audience community of practice: (i) the interpretive dimension (the media genre), (ii) the technological dimension (the technical affordance of the medium) and (iii) the social dimension (the characteristic of the participant). New technologies thus change the way people communicate but they doesn’t do it in a deterministic way:

the consequences of technologies arise from a mix of “affordances” – the social capabilities technological qualities enable - and the unexpected and emergent ways that people make use of those affordances. […] From this perspective, we need to consider how societal circumstances give rise to technologies, what specific possibilities and constraints technologies offer, and actual practices of use as those possibilities and constraints are taken up, rejected, and reworked in everyday life (Baym 2010).

Since in the convergence culture are emerging new technologies as p2p networks and SNSs, to better understand their role in the communicative process is thus necessary to contextualize them in the broader cultural context and to investigate the specific and local practice that are emerging online. In fact, in the last twenty years the textual Internet evolved to a graphic Web and, lately, to a cross-media platform where both the entertaining corporation and the Web 2.0 business companies are distributing their content and services. At the same time also the online population evolved. While the first Internet users were a techno-élite of educated people that interacted in a textual environment, in the first decade of the XXI century the Web reached a broad public. In the digital multimedia environment it is possible to
identify three main changes that affects how people communicate and how they construct communities, that are: technological (the possibility to share audiovisual material via broadband), socio-economical (the Web 2.0 business model and the emerging of big corporation) and socio-cultural (the domestication of social media by a broad youth audiencehood). First of all the textual internet evolved in a more fully multimedia platform. In fact, due to the spreading of the broadband, nowadays user can visually communicate not just with emoticon or graphic elements but also with audiovisual contents. Second of all in the cross-media platform the entertaining corporation are distributing transmedia storytelling composed by primary (e.g. Tv series, featured film) and secondary text (es: webisodes, mobisodes). For example US broadcaster as the CBS and the narrowcaster targeted to young people as The CW and the ABC Family distribute Tv series through free video services available in US. At the same time they use SNSs to promote their products worldwide, for example publishing speak peak (video preview) on YouTube or webisode (textual extention of the plot of the Tv serial) on MySpace. Both the promotional contents and the episode of Tv serial have been appropriated by mobilized audience that share them both in p2p network and in Web 2.0 platform. Those flow of mainstream US contents are not a form of media imperialism or culture homogenization, but can be more properly defined as a pop cosmopolitanism (Jenkins 2006b). In fact mass media audience, consuming content that are produced in other country, can encounter new cultures and confront themselves with different perspective. However we should be aware also of the rhetoric of the participation that surround the Web 2.0 (Scholz 2008). In fact the Web 2.0 platform are as the SNSs developed with the aim to “harnessed the collective intelligence” and to make profits from data and contents that users share in the online platforms (O’Reilly and Musser 2006). Third of all the Internet population is no more a white Anglo-US techno-élite because youth and youth adults of the post-industrial countries domesticated the online technologies and use them to communicate with peers (hang out), to search for specialized information and express their visual creativity (mess around) and to construct interest driven groups with like minded people (geek out) (Ito et al. 2009). In the convergence culture there is thus a tension between the Web 2.0 companies, that try to design an “architecture of participation”, the media corporation that fight to protects their right to the professional produced contents and the mobilized audience, that produce visual content and recreate copyrighted materials.

Networked Publics: the emergence of a fractal digital space in SNSs

In the convergence culture youth and youth adults adopt different form of social media participating in the construction of the networked publics that has been defined by boyd as: “publics that are restructured by networked technologies. As such they are simultaneously (1) the space constructed through networked technologies and (2) the imagined community that emerges as a result of the intersection of people, technology, and practice (2008, p. 15)”. In the networked publics emerge three new dynamics that are: (i) invisible audiences, (ii) collapsed context and (iii) blurring of public and private (Boyd, 2008). In fact users perform their online self in a public space in front of a audience of lurker that they don’t perceive and that can be composed by members of different social groups like peers, parents, teachers. Furthermore a new generation of social media are adopted by youth. They are SNSs as Facebook, MySpace and Twitter, that have been defined as “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share connection, and (3) view and traverse their list of connection (p. 2)” (Boyd and Ellison 2007). The technical affordance of those services changed the way youth manage their presentation of self and interact with peers. In fact the participation in the networked public culture require a strategic self presentation that allow youth to maintain the presence in the online social realm and exercise self-control and self-discovery (Baron

Journal of Sociocybernetics, 7 (S) (2009)
However, SNSs change the way youth manage the impressions that they want to convey to their audience. In particular, youth use the public display of connection with peers as a marker of status and thus as a symbolic display of popularity (Boyd 2008). Instead, youth connects with the profile of cult icons (e.g. actors, musician) to identify themselves with a subculture, as the geek culture, or a mainstream icon thus displaying their cultural taste (Liu 2007). SNSs change also the way people connect with friend and acquaintance. In particular, a research on college students demonstrate how an intense use of Facebook can predict the social capital accumulation and augment the self-esteem thanks to the crystallization of ephemeral relationship and the maintenance of old friends and acquaintance (Ellison et al. 2007).

Also, Video Sharing Sites as YouTube can support socialization, even if they are primarily intended as media sharing platform. In fact, Lange (2008) affirm that “the use of media by members of a social group to stay connect or to interact with other members of the group constitute a media circuit” [...] [that] support social network facilitating and technically mediating social interactions among people within a network (p. 363)”. Lange also propose to re-conceptualize the private/public dichotomy as a fractal distinction to study the social dynamics in YouTube. In fact, what is public can become private if we broaden the context. In her study, Lange identify two different social practice: (i) Publicly Private that is the use of YouTube to hanging out with peers and (ii) Privately Public that is the creation of a character to make connection with many users and thus acquire visibility for a broad audience. SNSs can be use to hang out with peer but also to mess around exploring the online productions and experiment new form of creativity. In fact, the easy to use technology as the tool of home editing (e.g. Apple iMovie, Adobe Photoshop), combined with the use of social media allow youth to create, elaborate and remix digital products that can be online profiles (Livingstone 2008, Stern 2008, Weber and Mitchell 2008), fanart or videos (Gallagher 2007). Messing around in the networked publics youth develop new form of literacy that allow them to use multimedia material as a form of self-expression and to became creative producers (and potentially celebrities). At the same time they get in contact with people with similar interest and thus participate in the construction of interest-driven groups that have a different social shape compared with the online community of the textual Internet. In fact, Boyd affirm that the adoption of SNSs change the form of organization of online community, that are now evolving in egocentric network: “The friend - and peer-centric nature of MySpace and Facebook use is significant. This is a shift away from the dominant interest-driven paradigm in networked publics. (p. 106)”. However, as highlight by Baym (2007), interest-driven groups still exist but the way the member of a group participate in the construction of a community are changing. In fact, from a collective perspective the contemporary participatory culture can be described as a networked collectivism, however the collective identities emerge from the individual performance in egocentric networks.

In the networked publics fan of Tv programs appropriate professionally produced contents and pop icons to express their affiliation to a mainstream global culture participating in the construction of a complex social network that I propose to call starring system. With this term I’d like to focus on a new dynamic in the fan cultures that is the blurring of celebrity (professional) and fan (amateur). The networked nature of the current generation of social media allow fans to acquired the cultural capital (knowledge and skills) to create amateur product with a professional quality, and thus the symbolic capital to became popular. In fact, productive consumers express their creativity producing tertiary text for an invisible (and potentially broad) audience. In order to study the contemporary fan cultures I therefore choose to focus on the social dimension with the aim to describe how the changing media landscape affect the way fans participate in the construction of collective identities and how they manage their...
presentation of self in a networked digital environment where the boundaries between celebrity/fan and peer/geek culture are blurring.

**US TV Series and the Networked Publics**

The studies on social interaction in networked publics can be applied to the study of fan culture, in particular to understand how the collapsed context and the blurring of public and private (i) change the way fans manage their identity in relation to two different contexts (the community of peers and the geek community) and (ii) how fans participate in the construction of different levels of public spaces inside an online community and thus how collective identities emerge in a networked space. In order to explore the Italian participatory culture in the networked publics I’ve focused on the Italian television fan culture related to US TV series because of the relevance of this media genre for the Italian young generation, in particular for people who were adolescent in the 1990s (Scaglioni 2006). However, in the starring system, also the academic has to redefine their position in relationship with the studied subject, because not only the scholars could be fan themselves, but also many fans reflexively think about their passion and their online experience applying concept that come from the scientific literature on media cults.

In order to study individual and collective performances in the fractal social space of the media cultures, I’ve decided to combine an analytical auto-ethnography (Anderson 2006) with a multi-sited participant-observation and a computer aided qualitative content analysis of the texts published by fans during their participation in networked publics. I thus chose to focus on the most entrepreneurs fan groups, finally identifying ItaSA as case study to explore (i) the presentation of self and (ii) the emergence of specialized interest group.

**3.1 Methodology and Data**

I approached the fieldwork with the belief that ethnographic work is an ongoing dialogue between the researcher, the research setting group and the theoretical framework. Because of the role of my subjectivity in the research process I’ve decided to analyzed my fan experience during an explorative research on Italian fandom with the aim to reflexively thinking of my position as a social researcher and, at the same time, as a member of the Italian fan culture. In fact my membership of the Italian fandom influenced my decision to conduct a research on this particular subculture. I’ve choose to perform an auto-ethnography also to document my status as media fan in front of the scientific community. First of all I’ve written an autobiography of my experience as a media consumer and I’ve successively analyzed it applying the analytical category of the audience studies. Second of all I’ve charted my object of fandom (Hills 2002) and, in particular, the pop icons (characters, actors and auteurs) and the cult TV series from my childhood to the present. I’ve also charted the social media that I’ve adopted to describe my auto-representation online, in particular to document the evolution of my identity created through nicknames and avatars. Those charts helped me to identify particular moments of my personal biography where there has been a shift of my consumption habits. I’ve thus charted my fandoms by subject matter to better understand the role of the media cults in the construction of my individual biography, in particular concerning my gendered identity.

The reflexive writing of my personal biography support also my participant-observation activity because the self-conscious introspection helps me to connect my subjective experience with the broader social context that I’m observing and to avoid an academic rationalization of the emotional fan experience. While my status of complete member researcher facilitate the availability of data, it has also some drawbacks. In fact I’m currently struggling with the tension between the high degree of personal involvement in the fieldwork and the analytic
research agenda. Furthermore my double role imply the risks to generalize my subjective insider meanings to the whole subculture and to project the value of the academic community onto the fan group. Therefore my autho-ethography is an ongoing process because I’ve verify how it’s helping me to better understand my position in the research field in relation to other fans, in particular when I’ve to compare my experience with life history really different to mine (for example a fan with a different gendered identity). However the strongest limit of an auto-ethnography is the author saturation and self-absorption (Anderson 2006). Because of that I’ve decided to conduct biographical interview with other fans to comparatively analyze our fan experience and thus highlight as a common passion could be the result of really different biographical experience.

The other challenges of my method are the definition of a multi-sited research field and the analysis of a multi-faceted set of data. Because of that I’ve choose ItaSA as a case study because of his strong identity that let me more easily identify my research field. I’m currently participating in most of the online and offline site where they publicly interact, therefore the research field changed with the evolution of the community. The observant participation allowed me to describe the social dynamics between the member of the community. Instead the analysis of the digital material that I’ve collected helped my to deeply analyze their performance of identity. Currently my data collection consist of digital content (textual online conversation, hypermedia online profiles, audiovisual fanarts) captured in the main site of ItaSA and on other online platforms where they member of ItaSA interact. Due to the great amount of data I’m using NVivo 8 – a Computer Aided Qualitative Data Analysis Software - to analyze the official material collectively produced by the staff of ItaSA and the fanarts published in dedicated thread inside the forum.

3.2 gg_akame: Trial and Error in a Performance of Aca/fandom

I grew up in a concept oriented family (Lull 1990) that selected for me television programs that transmitted what my parents believe are the correct values. During my childhood I didn’t watch any generational tv program and I wasn’t involved in the social discourse around them. Different from my classmate that had social oriented parents, I didn’t watch Beverly Hills 90210, the first teen serial that was broadcasted in Italy during the 1990s, when I was a teenager. During that time I spent my leisure time reading books or watching auteur featured film. I started to watch tv series when I went living alone during my university years. At that time I studied communication science and I was particularly interested in the history of cinema. That stimulate me to watch the pilot of Dawson's Creek, that was full of cinematic quotation. Therefore I became passionate to the serial and to the teen genre when I was far to be a teenager.

In the 2005 I had my first ADSL connection at home. Messing around on the web in search of information concerning US serial and independent US cinema, I discovered that in the peer to peer networks it was possible to find not just thousand of movies that I’ve never find in local video shop, but that I could watch also the TV series that was just broadcasted in the United States. I therefore started to watch many pilotes of unknown TV series with the aim to choose the ones that appealed me more. The struggling to find informative sources of the US tv series bring me in the fan cultures. In facts I’ve discovered many amateur and corporate online site where people share information and digital contents about TV series and movies. Apart from the general purpose media sharing site as YouTube and Photobucket I

51 http://www.youtube.com/
52 http://photobucket.com/
used to surf many interest-driven portals as Fanpop\(^5\), Fan Site Network\(^4\) and Celebrity Exchange\(^5\) (network of fansites), FanForum\(^6\) (network of fanforum), Flikster\(^7\) (a movie-based social networking site of taste sharing), deviantArt\(^8\) (a media sharing site of user-generated visual art), fanfilms\(^9\) and BraxtanFILM\(^0\) (portals of amateur movie parody). I thus spent some (a lot) of my free time surfing around the web in search of information about serial and trying to find fashionable wallpaper to decorate my desktop pc. My passion about teen drama introduce me to the adult drama, in particular the ones with female character. In fact I currently search in the media female role models that satisfies me more that the ones proposed by my local community. In particular I’ve identified myself for a long time with independent career women as Carrie Bradshaw, the main character of *Sex and the City* and I currently love watching TV series and movies that depicts fashionable word of rich people. Nevertheless in my everyday life I’m not particularly interested in fashion and I’ve never been a *shopaholic*. Because of that the stereotype that surrounded the fans of the chick flick (Ferris 2008) particularly bother me.

While I was “evolving” from a media consumer to a fan-lurker, I’ve also became a researcher in Communication Science. In particular I started to study the evolution of the audiencehood in the convergence culture. Since I was particularly interested in how the popular culture affected the way people construct their identity, I decided to study how the socio-technological shifts is changing the everyday life of the Italian television fan. I therefore conducted an explorative research on Italian television fandom and, coherently with the previously studies on the contemporary fan cultures, I’ve observed the emergence of a networked collectivism that performs their competence and their passion publishing tertiary texts *fanart* (remix, userbar, avatar, wallpaper, ...), *fanfiction* and *fansub*. Fans publish tertiary text both on general purpose international site (e.g. YouTube, Photobucket or deviantArt) and on Italian multi-fandom *fansite* as web portals (e.g. TelefilmSeries\(^1\), EFP\(^2\)), forums (e.g. TeleSi-mo\(^3\), Tv Shows 4 Fans\(^4\)) and blogs (e.g. Serialmente\(^5\), Serie Tv - Lolly Tv\(^6\)).

In order to identify a case study, as a first hypothesis I decided to focus on the performative practice of the Italian fans of *Gossip Girl*, an US teen drama that was particularly popular in Italian networked publics during Spring 2008. I hypnotize to study how Italian teens use social media to spread their passion and how their construct their individual identity in rela-

---

\(^5\) [http://www.fanpop.com/](http://www.fanpop.com/)
\(^4\) [http://fan-sites.org/](http://fan-sites.org/)
\(^6\) [http://www.fanforum.com/](http://www.fanforum.com/)
\(^7\) [http://www.flixster.com/](http://www.flixster.com/)
\(^8\) [http://www.deviantart.com/](http://www.deviantart.com/)
\(^9\) [http://www.fanfilms.net/](http://www.fanfilms.net/)
\(^0\) [http://www.braxtanfilm.com/](http://www.braxtanfilm.com/)
\(^1\) [http://www.theocseries.com/](http://www.theocseries.com/)
\(^2\) [http://www.efpfanfic.net/](http://www.efpfanfic.net/)
\(^3\) [http://www.telesimo.it/](http://www.telesimo.it/)
\(^4\) [http://telefilm.tvshows4fans.forumfree.net/](http://telefilm.tvshows4fans.forumfree.net/)
\(^6\) [http://lollytv.blogspot.com/](http://lollytv.blogspot.com/)
tion to the fashionable word depicted by the serial. In particularly my aim was to demonstrate that teens are not passive consumers and that they have a critical approach in particular concerning fashion. I intended to extend to the teen spectatorship the studies on female audiencehood that claimed that: “the relationship between spectatorship and spending may be less clear than criticist suggest. Rather than influencing women to spend more on consumers goods, such films – along with chick-lit novels - might just as likely satisfy or replace the desire to consume. […] Chick flick thus serve as relatively guiltless pleasure.” (Ferris 2008, p. 13).

I started my case study mapping online site created by Italian fans concerning the cult of Gossip Girl. I’ve discovered a single-fandom network of website (e.g. ITA Gossip Girl67), MySpace profiles (e.g. Gossip Girl Italia υ68), blogs (e.g. Gossip Girl ITALIA69) and forums (e.g. Gossip Girl First Italian forum70) deeply interlinked with the broader multi-fandom italian networked collectivism. However my interest was not only in the online fandom but in general in the relationship between the fan and their pop icon. I therefore participate in the Telefilm Festival 2008, one of the two most famous Italian event for people interested in Tv series. In particular I participated in the meeting between two actor of the Tv series Gossip Girls and their fans. In that occasion I realized that my research design had to be rethinked. First of all because most of the Gossip Girl’s fans was youth adult with an ironical approach to the celebrities. I therefore realized that there were a generational and probably also socio-economical divide in the Italian audiencehood. In fact while the US Tv series that was broadcasts in the US during the 2008 (as Gossip Girl) were popular at that time in the networked publics, most of the Italian teen audience didn’t participate in that space and thus has different media interest. I thus choose to shift the focus of my research from the teen audience and their individual experience to the online communities of practice that has a role in the spreading of the cult of the US Tv series. In fact, during the Telefilm Festival 2008 I’ve noticed different fan groups that identified themselves as a community for example with T-shirt branded with their logo. There were both single-fandom groups that administrate online forum to share the passion of a particular Tv series, and multi-fandom groups. In particular I’ve noticed two community of fan subbing: Italian fans that create subtitles for foreign content and publish them on their web site (Barra 2009). I thus choose as a case studies ItaSA, the group of fan subbing with the biggest community. In fact I noticed that they were involved in very different participative activity and thus appeared to me as an interesting field site to explore how fans participate in the construction of a collective identity and how they collaborate in a community of practice. I’ve thus decided to start a participant-observation introducing myself to the community of ItaSA as gg_akame: a fan of the teen drama with also an academic role, I’ve thus revealed my identity as a social researcher.

3.1 The Fractal Shape of Italian Subs Addicted

ItaSA is an online community created by Italian fans of US Tv series. In ItaSA there are two main social group: a staff (199 members) that manage the portal and that it is hierarchical organized based on they role in the community, and the users (more than 12.000 active users) that interact in social spaces as the forum and the chat channels and that are hierarchical organized based on the number of post that they published in the forum. The staff created a web

67 http://www.gossipgirl.it/
68 http://www.myspace.com/gossipgirlitalia/
69 http://gossipgirl.italiansubs.net/
70 http://gossipgirl.forumcommunity.net/
forum organized in discussion board to let the users share information and comments about TV series. They also created different chat channels that the staff use to collaborate at the translation and where the user hang out with each other. The real time communication that characterize the chat channels have a great role in the formation of interpersonal relationship and of tight knit groups (Ito et al. 2008). The staff use a private space on the forum to cooperate with the aim to product subtitles and manage the web portal (Vellar, in press). The staff organize also official offline meeting at least one a year in different European cities, while people localized in particular geographical area (as Milano or Roma) informally meet each other more often. From the online interaction between the staff and the users emerged the collective identity of the Itasiani, as they define themselves. They constructed their identity creating a logo and branded gadget and conceived some tagline as «CI AMO»71, that is also visually represented with animated gif. They use taglines to reaffirm their membership of the group during the interaction in their social space that are the forum and the chat channels. However they interact as also outside of the community in public space as Telefilm Festival or SNSs as Facebook and Twitter. In the offline meeting they objectify their membership of ItaSA wearing products branded with their logo. Instead when they interact in SNSs they identify themselves with the community integrating both their nickname and the URL of ItaSA site in their personal profile. In the social network they objectify and embody the cultural capital to affirm their membership of the fan culture of US Tv series. They objectify the cultural capital integrating in their profile a list of US Tv series and characters, while they embody it integrating quotation and correct references to the plot of the series. ItaSA is therefore an online group of people with a common interest (the US Tv series) that are committed to a common project (the creation of the subtitles and the spread of their passion for US Tv series) and that interact and organize their work mostly online. From the ongoing interaction in the online spaces emerge (i) a sense of belonging that characterize their collective identity and (ii) interpersonal relationship that evolved in offline local tight knit groups. Form the verbal and visual communicative practice in the forum and in the chat channels emerge a collective identity that is part of the broader culture of fan of US Tv series but that has also his own terms and visual sign of identification. However the Itasiani is not the only collective identity of ItaSA. In fact in ItaSA there are many interest-driven subgroups that sometimes evolve in tight relationships maintained throw different channels as offline meetings and online interactions. In fact, while the Itasiani share a common identity and interact in a common forum, each online discussion could create a different social space depending on the topic, on the people that are involved and on the moderator. For example the two most active boards in the forum considering the number of post, that are the board of Lost and the board of The L Word, are two different kind of social group.

Lost is one of the most popular Tv series in the last years both in the United States and in Italy. It became a cult because it was intentionally created with a complex plot (and subplots) and lots of mysteries with the aim to involve fans in an ongoing intellectual challenge. In fact Lost was conceived to appeal the fan that has an attitude to “hacking” the contents, that means trying to have control over the text and solve the mysteries (Jenkins 2006b). In the serial there are so many cultural, textual and extra-textual references that a single fan is not able to solve a mystery alone. Lost fandom (as the Twin Peaks fandom) can be described as a knowledge community where fans participate in the construction of a collective intelligence deeply analyzing single episodes, sequences and scenes with the aim to collaborative solve the mysteries (Askwith 2007, Gray and Mittell 2007). Therefore the most common practice in the board of

71 An Italian sentence that means: “We love ourself”.

Journal of Sociocybernetics, 7 (S) (2009) 153
Lost is the speculation about possible solution and the spoiling about future plot developments that could help the interpretive activity of fans.

The L Word is an adult drama that depict the glamorous life of a group of lesbian in Los Angeles. In Italy is not very known by the broad public. However in ItaSA is one of the two most active board because different reasons. First of all because of the involvement and the passion of the moderator, a 24 years old girl, that created the board to spread the knowledge not only about the serial but also concerning the lesbian culture that it depicts. However her main intent was to create an online space to share opinions and confront with all kind of people with no prejudices. This group thus evolve from an online group to a bunch of close friends with dyadic friendships and sentimental relationships. As the fans of Lost also “Lez Girls” (as they call themselves) deeply analyze the episodes, but with a different purpose. In fact they ironically interpret the plot and the characters with the aim to share the opinion about the dramas in the serial, or to comment upon the ability (or on the incapacity) of the creator of the serial to depict a realistic female world. Lez Girls product also creative texts that can be interpreted as short fanfic with a lot of humour and sarcasm. They also organize online activity to keep alive the board since the serial ended. In particular they organized an amateur Tv schedule to watch one episode a week of the serial and thus have the opportunity to share the comments in the forum. Lez Girls are also visually creative, in fact they share both parodic remix video and amateur video production where they enact the cast of the serial.

In the forum there is also a off-topic section where fans share other interest apart from the Tv series (News, Cinema, Music, Television, Hardware and Software, Games, Book and Comics) and talk about their everyday life (Trash). In this last section was created a discussion thread as a Role Play Game. The fans who play this game has a different role in a fictional family and use it to interact with other members in a social space that they call “Itasian Family”. In fact the fans use the thread to hang out with the other fans and, from this ongoing interaction, emerge a collective identity. Since the domestication of Facebook from the Italian audiencehood the member of the Itasian Family use it to keep in contact with each other.

Image 2: The social shape of the community of ItaSA

The community of the Itasiani emerge from the interaction between staff and users in the social space of ItaSA that is located in the forum and in the chat channels. However the Itasiani evolved their relationship in public space as the Telefilm Festival and the SNSs as Facebook, that are currently populated by a broad Italian audiencehood. Interacting in their interest-
driven community they created weak ties and developed their cultural competence related to TV series. When they perform their self in Facebook they publicity display the connections with the other member of the geek community as a marker of status in the fan cultures. Furthermore they use Facebook to crystallize the relationship emerged in the community. The example of ItaSA show the fractal shape of the Italian networked publics. In fact ItaSA is part of the broad peer culture that emerge in popular SNSs as Facebook where Itasiani interact both with their peer and the member of their geek community. However ItaSA has different levels of public space. From a broad perspective it is a collective identity referred to a translocal social group that has the characteristic of a community. The Itasiani have (i) a shared sense of place constructed in synchronous and asynchronous online social environment as the forum and the chat channels, (ii) shared identities (regulars, roles, subgroups), (iii) shared practices (ways of speaking as the taglines, rituals as the meeting, formal roles of the staff and hierarchies of the users), (iv) shared resource (social support) and (v) interpersonal relationship (friendship, homosexual and heterosexual sentimental relationship). Furthermore in ItaSA emerged different local tight knit group and some interest-driven and friendship-driven subgroups. For example the staff is a community of practice devoted to the production of subtitle, while the fans of Lost share a common pleasure in the analysis of the complex tv text and thus participate in a knowledge community. The Lez Girls participate in the construction of a tight knit group to share the information about the serial and the lesbian subculture but also to share personal experience that are not necessarily connected with the lesbian identity. Instead the member of the Itasian Family perform fictional relationship and adopt the newest social media as MSN, Facebook and Twitter to hang out with other fans (Image 2).

3.2 The visual circuit of ItaSA

The collective identities that has been described emerge from the participation of single fans to a common project, that could be media oriented (the creation of the subtitle, the analyzes of Lost) or social oriented (sharing personal experience and confront with all kind of people, hanging out with fans). However fans are also involved in individual creative activities. In fact in the forum there are specific board where fans publish their amateur production as fanart and fanfic. However also in many board of single TV series there is a thread where fans publish fanart and graphic content created to represent their media cult. They are created remixing visual material as video and still image distributed by US broadcasters. Fanarts mainly depict fictional characters and integrate verbal sentences with interpretive aim. They can have an ironic intent as in Figure 3 or can involve a process of self-identification as in Image 4.

Image 3: Ironic interpretation of the character Blair (Gossip Girl). Fanarts by Boby, Franzdj and pinolo94

![Image 3](image3.png)

Image 4: Self identification with the character Silver (90210). Fanarts by ~Ale

![Image 4](image4.png)
Analyzing the 1342 digital documents that I’ve collected in the forum, I’ve identified different form of digital creativity that are avatar (797 documents), banner (185), usebar (185), screencap (41), image (39), wallpaper (36), comic (27), animated gif (19), fanvid (6), fanfic and fansong (5), and calendar (2). Most of the fanarts are avatar, banner, sign and usebar: digital contents that fans use to represent themselves in the online forum. For example in the usebar fans construct their identity in relation to the media content and in relation to the community. Fans creates also wallpaper and calendars that are a form of adornment of their desktop that have been defined as a digital bedroom where youth represent themselves in a private space (Weber 2008). However, since in ItaSA there are also thread where users publish screenshots of their desktop, the private space of their digital bedrooms is publicized.

Other form of fanart are finalized not to directly represent themselves but to communicate with other fans. It is the case of the screencaps, single frame extracted from a video sequence, that Itasiani use to comment upon an episode. The screencaps, as well as the animated gif, thus became part of the ongoing dialogue between fans on the forum. Since the diffusion of the broadband that allow people to quickly visualize audiovisual content online, fans can represent themselves and communicate with each other in a more visually way. Avatar, banner, usebar screencaps and animated gif thus realize a visual form of computer mediated communication. However visual material can also be elaborated as form of authorial expression. It is the case of fanart like comics and remixed or self produced images that are shared in online platform as deviantArt with the aim to appeal to imagined transnational fan culture (Image 5).

Sometimes fanart contain quotation and reference not only the Tv series but also to the “characters” and the “stories” of the community of ItaSA. Because of that is often really difficult to differentiate the form of self-expression in front of a broad fan audiencehood and the form of person-to person communication with the members of a group. This is also due to the fact that fanarts are often published in a thread and therefore became part of the ongoing dialogue between fan. Furthermore also the fanarts created as a form of self-representation as the avatars are often published in dedicated thread that are personal gallery, thus other fans use them to self-represent. When creative fans acquire a symbolic capital because of their ability in creating digital content, other fans ask them to purposely create the components of his visual online profile (avatar, banner). The performance of creativity are thus competitive and collaborative activity that participate in the co-construction of individual and collective identities. However sometime there are also explicit competition. For example when ItaSA was still not a so big community, the Itasiani organized competition to award the best usebar and thus stimulate the creative production of digital content that other fans can use to represent them-
selves. Another competitive activity is the one organized in the board of the serial *Skins*, a British teen drama. For each episodes has been created a thread to award the *screencaps* with an evocative title that better represent the episode. The title could be both emotional (Image 6) or ironic interpretation (Image 7).

Image 6: emotional Screencap: “I feel so lonely” and “in the crowd (all I see is you)”

Image 7: ironic Screencap: “I really like my lunch” and “Melius abundare quam deficere”

The individual performance of fan creativity in ItaSA participate in the construction of a *visual circuit* (Image 8). The use and the creative elaboration of digital contents by the staff and the users to express themselves and to communicate with each other support the emergence of a collective identity, that is the socially constructed identity of the Itasiani. The case of ItaSA is thus an example of how Italian fans of US TV serial are shaping now only the technology but also the transmedia storytelling professionally created. Remixing the visual narrative they create their own stories, thus constructing a translocal community and producing now visual forms of communication.

Image 8: Performance of creativity and the visual circuit of ItaSA
5. Conclusions

In the first decade of the XXI century media corporations created transmedia storytelling intended to involved the consumers in a fictional universe and construct a market of loyal consumers. At the same time mobilized audience shape the affordances of the Web 2.0 and the professional produced narratives to fulfil their communicative needs. Copyrighted material is appropriated and remixed by creative consumers to represent themselves and communicate with like minded people. Still image of pop icons and video clips of cult scene of Tv series are now deeply integrated in the construction of personal biographies and in the everyday communication not only with the member of a geek subculture but with a broad participatory audience. Productive consumers adopt and adapt the affordances of SNSs and Video Sharing Sites to publish fanarts and promote themselves as authors with the aim to acquire visibility in a global environment. From those social practice emerge new flows of amateur audiovisual content that are distributed in the crossmedia platform and from witch emerge a transnational culture. However in this broad environment emerge also new social group with a strong sense of identity that can be defined as community. The case of ItaSA is an example of the fractal structure of the online social groups and of the role of the audiovisual mainstream contents in the construction of social identity. However the visual social practice online are still evolving. At the beginning of the 2010s new fictional form and new technologies are emerging. Combining the use of camera phone with the SNSs consumers take photo and publish them online in real time. Celebrities use Twitter to keep fans update with Tv appearance, professional commitment as well as with details of their personal life. Producers creates short fictional format as webseries for the online publishing and mobisodes for the mobile consumption. Observing those phenomenon it is possible to hypnotize that in the next decade the audience will shape the mobile communication technologies to consume e produce narratives integrating both personal and mainstream storytelling. How camera phone and microblogging SNSs will further change the relationship between audience and celebrities in the starring system? How microblogging and short fictional format will change the narrative forms of communication? Does visual communication will became a lingua franca in the multilingual internet that is emerging? Does the corporation will take advantages of the fanarts for promotional intent? Those are some of the questions that we should answer to understand how the relationship between consumers, producers and technology will change the networked publics in the next decade.

References


Scholz, T. (2008) “Marketing Ideology and the Myths of Web 2.0”. First Monday, 13(3). Available at:


