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Time and space in cyber social reality

STINE GOTVED

University of Copenhagen, Denmark

Abstract

This article synthesizes a range of sociological views on time and space, and presents a departure point for future research on cyber social reality. Using basic sociological categories of culture, structure, and interaction, the cyber social reality is drawn into a matrix that further illustrates the embeddedness in technology, time, and space. The matrix is a theoretically and empirically grounded tool for exploring, describing, analyzing, and comparing the variety existing within online communities and communication. In the article, the matrix is illustrated step by step to show its inherent dimensions, and in conclusion it is proposed to be a useful systematic for, on the one hand, ensuring ethnographically thick descriptions of online social life, and on the other, comparing the various reality constructions found.

Key words

computer-mediated communication • cyber culture • cyber social reality • online community • social construction • sociology of space • sociology of time

INTRODUCTION

Every society can be characterized by its position in time and space. New meanings of time and space were central to the cultural change from agricultural to industrial societies, and the current shift into a networked or informational society brings time and space into focus again. Thus, the disembedding of time and space may be one of the most cited expressions

in Giddens' sociology (esp. Giddens, 1984, 1990, 1991). For Giddens, time and space are primarily categories through which to view changes in society and traditions. Time goes by and allows us to recognize different periods, while space is at once the geographical relation and the physical manifestation. On several occasions, Giddens touches upon the importance of the social changes that have been caused by the fundamental shift in the experience of time and space in modernity. However, trying to find concrete examples leads us away from Giddens, especially when the focus is on the role of the media and the rather new communication technology. Castells (1996, 2000), on the other hand, takes into consideration the rising network society and recognizes the changes in our experience of time and space. For Castells, the modern space is one of flows, where the traffic between different kinds of networks constitutes a new relation between social practices and geography. Likewise, the experience of time is changed from a biological and chronological order, and instead, the sense of time is annihilated by the ever-faster communication technology used to compress and de-sequence it. Unfortunately, in his impressive macro-sociological work, Castells tends to downplay the possible role of the construction of culture. Hence, the theory of the network society is insufficient for understanding the changes on a micro-sociological level, where the patterns of social interaction make up everyday life. Thus, the article takes its point of departure from the established notion of the changed time-space relationship without discussing Giddens or Castells much further. The quest is to establish a framework for time and space relations within online¹ communication, where the information network and the social network overlap. Intertwined with the time-space theme is the whole question of the construction of cyber social reality, and the quest is extended accordingly: in sociological terms, how are we to understand the ongoing online communication, the social construction of frameworks for navigating and socializing, and the changes in the way we experience basic conditions such as time and space? In an attempt to provide a tentative answer, this article builds up a matrix of cyber social reality that is based on a wide range of sociological theories and informed by as many online case studies.

With high-speed information and communication technology penetrating every aspect of (western, modern, privileged) everyday life, both time and space have been predicted to lose significance. While our modernist concepts of time and space are indeed challenged by the information and communication technology, the actual interpretations of time and space relations are as important as ever. How we interpret the inherent possibilities and restraints within the computer-mediated realm influence our understanding, navigation, interaction, and our every action while 'there'.² The more traditional notions of space and time (as, for example, geography and distance) are no longer sufficient to grasp the variations (Dodge and

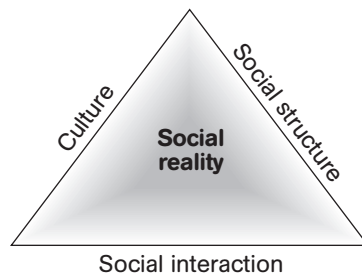
Kitchin, 2001). A coherent framework of spatial and temporal dimensions in the computer-mediated communication might turn out relevant for those coding (and otherwise designing) our future meeting points, as well as for those dedicated to analyze the ever changing patterns of socio-technological appropriations. The matrix is a theoretically grounded and empirically informed tool for studies of online interactions; it allows descriptive as well as comparative and in-depth analytical studies of the construction of cyber social reality, with special regard to the changed circumstances guiding our interpretations of online time and space.

First, I present a basic model of social reality, supplemented with the special conditions present in online communication. Second and third, I build upon that model and expand it to include both time and space relations in general, and online communication in particular. Finally, I exemplify the value of the matrix by relating it to two central case studies of online community (Baym, 2000; Markham, 1998) and conclude upon the matrix's usefulness for future research.

THE TRIANGLE OF SOCIAL REALITY

The triangle of social reality is a basic sociological model introduced by Boudreau and Newman (1993: 88). Whereas Giddens (1984) proposed the term structuration to catch the ongoing negotiation between individual and structure, Boudreau and Newman (1993), within the perspective of social constructionism, highlight social interaction as the main source of both culture and structure. The sides of the triangle represent the interrelated elements of social interaction, culture, and social structure, from which social reality is constructed in the triangle's center.

Following Boudreau and Newman (1993), social interaction forms the base of the triangle (for without social interaction there is no social reality), and the levels of culture and social structure are (with no special interpretation attached) placed clockwise (see Figure 1). The contents of and the distinctions between the three sides are rather well defined, even though areas of inseparability might be found in the practical application (and are illustrated by the triangle's connected corners). In the following



• Figure 1 The triangle of social reality (Boudreau and Newman, 1993: 88)

introduction, the basic definitions from Boudreau and Newman are extended to encompass the field of online communication. The use of technology alters the construction of social reality in several ways, blurs the borders between technology and sociality, and thus brings to mind the actants³ of Latour (1992). While the original triangle of social reality guides the more traditional social aspects of our reality construction, I want to broaden the concept so that technological features are considered interwoven with human agency in ways that acknowledge the transformations resulting from the interweaving.

The culture part of the triangle consists of values, sentiments, and meanings evoked in social reality. It constitutes 'the accumulated social heritage' (Boudreau and Newman, 1993: 87), the ever shifting patterns of interaction, the common knowledge and the sense of a shared past. The culture is about traditions as well as their practical interpretations; the culture is produced by social interaction and may settle into more lasting patterns of social structure (which again influence the processes of culture and so forth). Naturally, the culture is a rather fluid phenomenon, where new trends or ideas may change parts of the picture overnight, and where cultural clashes (made from the interweaving of different frameworks or interpretations) are the rules rather than the exceptions. While the concept of culture has many definitions, here it refers to the socio-anthropological notion of unstable patterns of more or less shared meanings evolving in the course of social life. This is the case both offline and online, whether we are talking about long-term communities or flickers of communication.

The social structure constitutes the more stable patterns of social reality; it refers to 'the discernible shapes that are produced by the ways in which members of groups, organizations, and societies relate to one another' (Boudreau and Newman, 1993: 87). The social structure is the result of the ongoing processes of social organization, and embraces human collectivities of all kinds and with varying permanency, from street gangs to the United Nations. In the context of online communication, the social structure furthermore includes the technology's shaping of reality through its addition of an interrelated kind of structure. This structure is also about stable patterns or features; it constitutes the possibilities for interactivity and communication, the underlying ideologies of designs and organizations, connections and networks. In sum, the social and technological structure (henceforth simply called structure) together form one side of the triangle, emphasizing the relatively stable features of the construction of cyber social reality.

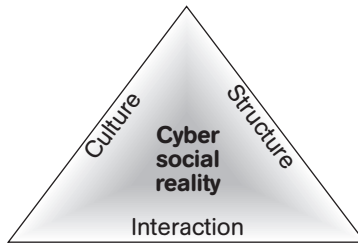
The social interaction at the triangle's base is *sine qua non* when talking about the construction of social reality; social interaction is the common foundation for the emerging cultural patterns as well as for the slower processes of structural change. 'Social interaction is the moment-to-moment ebb and flow of people's life together' (Boudreau and Newman, 1993: 95).

In other words, the social interaction consists of humans relating to each other in all manners possible – the living in, reacting to, and setting of processes in the cultural and structural dimensions. Again, it is necessary to broaden the concept of social interaction so that it includes the variations of mediated social interaction. Following Goffman's classical works (1959, 1963, 1967), it is relatively easy to recognize the transformed interactional patterns of front-stage/backstage behavior, impression management, rituals, and so forth, within cyber social reality (for examples, see Gotved, 2003; Kendall, 2002). The more elusive aspects of cyber social interaction are associated with the change caused by the mediating technology, or rather, the emergence of the human-with-computer hybrid. At once, we have an interaction between the human and the computer's interface, a human-to-human interaction through the mediating technology, and the emergence of meaning within and between these two levels.⁴ However, it is important that we do not reduce this complexity in our attempts to understand the processes of interactions on many levels. In analytical terms, this calls for openness to the actual inter-activity and a view on interaction not solely concerned with humans or face-to-face contact.

An important aspect of social interaction (and thus, the construction of social reality) concerns social complexity, and I will take a short detour from the triangle to explain exactly how. The social perspective of a given communication is different when interacting in a dyad as compared to an extended network. The differences are not only in terms of spatial relations and temporal orientations, but also in terms of the evoked sociality. It is important to acknowledge that the sheer number of participants plays a part in the social imaginations and interpretations, but also that the number itself is an insufficient measure to describe what is actually going on. Along the same line, it is not possible to describe the subtle differences between, say, a network and a community without involving some kind of quality measure – a community may, for example, evoke another kind of sentiment or a stronger sense of something shared. This is not the place for a detailed elaboration on social complexity. However, an analysis of social reality, as it is constructed from the elements of culture, structure, and interaction must take into consideration the kind of sociality involved as well. This is a matter of the number of participants, as an increase makes the social context more complex, as well as of the activity, the attached sentiments and the level of reciprocal exchange.

THE TRIANGLE OF CYBER SOCIAL REALITY

Departing from the triangle of social reality, as established by Boudreau and Newman (1993), I have extended the framework to include the special circumstances in computer-mediated communication. The triangle of cyber social reality is now established as the basic model with which to describe



• Figure 2 The triangle of cyber social reality

the ongoing life online, taking into consideration the patterns of human behavior, as well as the possibilities and constraints conditioned by the technology. Thus, 'cyber social' is the term used to coin what could otherwise be called socio-technological or perhaps techno-social aspects of our constructions of reality. From the elements of culture, structure, and interaction (now without the prefix 'social'), cyber social reality is constructed by the individual as well as by the collective, in close cooperation with advanced communication technology and the possibility of computer-mediated interactions.

In the following paragraphs, the cyber social reality is expanded to include time and space – two complex conditions inherent in every kind of reality construction.

Time as theme

Even though the speed of the present communication technology challenges our concepts of time, little research has been conducted to explicate the role of time in online social construction. Although the social sciences as well as the humanities have, in different ways, been occupied with the more general role of time in modern life, time is also a hidden dimension in most traditions. That is, time is seldom allowed to play an independent role, despite (or perhaps because of) the complexity involved (Adam, 1995). If time is noted as more than just a commonly sensed presence, the question of what it is is often reduced to a simple dichotomy, with natural/lived/circular/authentic time, on the one hand, and modern/regulated/linear/imposed time, on the other. However, after a brief detour into the philosophy of time, I will suggest that time, like social reality, can be divided into at least three interconnected themes, mirroring the culture, the structure, and the interaction represented in the triangle.

The bipolar thinking draws on the history of the philosophy of time, where the old Greeks assigned no less than two Gods to time, Chronos and Kairos.⁵ Later, the ideas of Aristotle and Augustine came to represent two other ways of time comprehension. While Aristotle was into time as something commonsensical, Augustine had the rather revolutionary notion

that time was somehow a human construction, thus preparing the ground for Kant's insights (as well as for constructionism as such) much later.⁶ In the beginning of the 20th century, McTaggart established an A-series and a B-series to represent these differences in views on time (Dainton, 2001; Urry, 2000: 114). The A-series is dynamic; time is comprehended as an arrow pointing toward the future and the actual present as relational departure (for example, talking about events as something '23 years ago' or '3 years from now'). The B-series is more interlocked, placing events in relation to each other (before this, after that) and the relations between past, present and future are thus a question of perspective.

Even with this extremely short version of the philosophy of time, and without any time notion from the hard sciences, the inherent complexity threatens to overwhelm. The different views on time are both evoked in our everyday language and incorporated in modernity. However, it is obvious that the discourse of modernity (including the present, whatever to name it) is skewed toward the dynamic view, given the capitalistic focus on growth and the colonialization of the future (Latour, 1993). The dynamic time of the digital watch, forever oriented toward a new second, symbolically dominates the round-faced clock with its circular repetition of time. Furthermore, time is commodified through its exchange relation with money, and especially the industrial economy was/is deeply concerned with divisions and regulations of time, with mechanical processes as well as with struggles with the labor force as to the length of the working day, and so forth (Adam, 1995; Thrift, 1990). The shift from an agricultural society to an industrialized society was also a shift from a task-oriented calculation of time to the abstractions of the hour (and the related wages) – an abstraction not always easy to comprehend (Thompson, 1982).

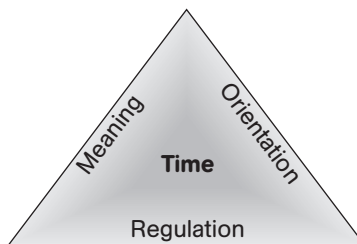
As already mentioned, both views on time are actively used in everyday language. Time is at once the dynamic arrow that will guarantee our evolution, and something bygone to be expressed in the terms of date-defined history. Despite this seemingly simple dichotomy of time expressions, the philosophy is rather difficult to operationalize into studies of time. Apparently, living in time is much easier than comprehending the concept,⁷ and the philosophy does not provide many clues as to how to integrate time in the study of construction of social reality. The leading authority within the rather small field of socially related analysis of time, Adam (1995), unfolds the complexity in a truly admirable way and does indeed point to strategies for incorporating temporal aspects into social analysis. Although her take on time definitely highlights the importance of its inclusion into all kinds of social science, the framework offered is mostly concerned with the role of time in societal processes such as health, education, work, globalization, and environmental changes, rather than with the level of interpersonal communication. Thus, I will supplement the

valuable insights of Adam with the time conceptions of another sociologist, Elias (1992).

THE TRIANGLE OF TIME

Using the three sides of the triangle of cyber social reality as a starting point, I take the role of time to be divided into three distinct areas – time as active in history and maintenance of culture, time as externalized means of orientation and control, and time as a central area of regulation and interpretation in social interaction (see Figure 3). This division is inspired by Elias (1992), who wrote about time as a social symbol that (like all social symbols) is able to serve several purposes at once (Elias, 1992: 34). First, time is seen as a communicative symbol composed of ‘the word and the concept together’, the sound pattern (different in every language) and the individually as well as culturally agreed upon inscription of memory and meaning in that pattern. Second, time has the function of ‘a socially institutionalized means of orientation’ (p. 34). The visible clock is, thus, a structured message to be read and interpreted in accordance with knowledge of the cultural and the communicative pattern mentioned above. Third, the orientational function is combined with time as ‘a means of regulating human behaviour and feeling’ (p. 35). Time functions as both a guide for and determiner of actions, and internalized knowledge is constantly being combined with, for example, actual behavior. For example, we read the need to hurry in terms of a combination of cultural patterns (*tardiness does not look good*), the relative message of the watch (*five minutes left to the meeting time*), and the individual interaction with space defined as distance (*still three blocks to go*). Furthermore, time plays a great part in our interpretations of human interactions as, for example, appropriate or untimely. Thus, for Elias, the social symbol of time is at once internalized and externalized in the individual’s behavior and ‘[t]he multi-functional character of time [. . .] corresponds in this way to the extensiveness and diversity of its use’ (p. 35).

Without undue stretching, Elias’ concepts can be understood in terms of the basic sociological triangle of culture, structure, and interaction.



• Figure 3 Time’s dimensions in (cyber) social reality

However, it may be important (or at least fair) to underline that the following conceptualization of time was inspired, but not initiated by Elias.

Beginning with the cultural part, time is to be understood as thoroughly integrated into our communications and a part of the evolvement of *meaning* (individually and collectively). As Elias put it, meaning is the memory patterns related to the culture as they are constructed over time, and it is the expectations and preoccupations involved in the temporal issues of exchange and relationship. In online practice, this could be the shared history of, for example, a newsgroup, where the archives, as well as specific language patterns, show the group's existence over time. The signifying pauses in the exchanges, as well as references to earlier expressions, illustrate the importance of time. Time is also actively involved in the decisions of membership and trust – newbies and old-timers are treated differently within a group's culture, and the date of membership might be a symbol of status within the group. In short, cultural time is a symbolic count of shared time as well as an interpretation of the evolving or disintegrating patterns of meaning within that shared time.

The structural part of time is the externalized means of *orientation* (and control), primarily represented by clocks and calendars. This is about how time is structured, and how this structure affects communication. In an online context, the communication can be either synchronous or asynchronous,⁸ and the technological infrastructure can in different ways speed up or slow down the issues of externalized time or change even the chronological order. Castells (1996, 2000) call this 'timeless time', in an attempt to describe a reality where time-as-an-arrow is broken apart and assembled in new ways. Interestingly (and interweaving with cultural time), the evolution of computer-mediated communication has led to many expectations that time's structural influence on communication will decrease. Attempts to establish other ways of counting time (Swatch's Internet Time and the New Zealand-based New Earth Time⁹), in order to deal with the increased speed of communication and the potentials for communicating synchronously across vast distances, have not been influential (as yet), and do indeed introduce time problems of a new kind. However, the mere idea of establishing a visual representation of *the Global NOW* for the sake of orientation is a symptom of the changing time relations caused by communication technology, and indeed offers analytical potentials of its own.

The interactional part of time is perhaps the most difficult to spell out in all its complexity, but a common denominator is *regulation*. We are interacting with time through cultural patterns of meaning as well as through structural representations, and thus we are interacting *in* time and *with* time. Time is a basic element of (social) processes, something of which we can have too little, enough or too much, and which can be experienced as fast flows or endless minutes. Often, the function of time is to regulate

and coordinate the interaction (thus interweaving with the structural aspects), but time as an inherent quality in processes of every kind needs to be addressed as well. We use the patterns of time to regulate ourselves in relation to each other and the environment, and even without the clock, we are able to navigate through the day. In other words, to capture time in an analysis of interaction is (again) to remain open and to keep an eye out for time's possible regulatory role across the variations in interaction.

The triangle of time should now be established as a wrap-around on the triangle of social reality. The complexity of the matter is slightly reduced by dividing the relevant time concepts into three areas, mirroring the basic categories of culture, structure and interaction. The time concepts are named, respectively, meaning, regulation and orientation, even though the underlying definitions are more complex. As said, time issues are understudied despite time's pervasiveness, and the triangle seeks to alter the awareness of time as important in itself. The theoretical value of the triangle of time is, on the one hand, to simplify somewhat the complicated matter of time, making it possible to talk about time in recognizable terms and, on the other hand, to secure analytical openness toward the manifold variations. The connections with the basic categories of cyber social reality furthermore establish a flexible framework for reasoning, which will be further underlined in the following paragraphs about space relations.

Space as theme

Our whole way of *thinking* about space has been challenged throughout the history of modernity, and the development of cyberspace is just the latest challenge. The changes are expressed in complex patterns of physical transformations and cultural interpretations and, as an overall diagnosis, Giddens (1990: 18) uses the term 'emptying of space'. This concerns the separation of space from place:

The advent of modernity increasingly tears space away from place by fostering relations between 'absent' others, locationally distant from any given situation of face-to-face interaction. In conditions of modernity, place becomes increasingly phantasmagoric: that is to say, locales are thoroughly penetrated by and shaped in terms of social influences quite distant from them. (1990: 18–19)

The short version of the modernity process concerns changes in social organization (from rural interconnectedness to the urban network), changes in media and communication structures (from Bible to broadcast), and changes in the economy of the society (from the guild to industrialization; from imperial expansion to multinational conglomerates). These changes are profound, and many of them are perceived as connected to spatial relations.

In short, there are central connections between physical space as such, cultural interpretations of space, and spatiality as an organizing principle for

our thoughts. As Shields (1991) states: '[. . .] the spatial has an epistemic and ontological importance – it's part and parcel of our notions of reality, truth and causality' (p. 7). With Shields as the notable exception, sociologists have been relatively space-blind since the complex work of Lefebvre (1974/1991), who took a Marxian (albeit unorthodox) stance on space. For Lefebvre, space is produced and commodified just as everything else is, and at the same time, space embodies social relations of all kinds and takes on meanings from the social interaction occurring within it. Taking Lefebvre recognitions of spatial importance into cyberspace is something of a challenge, though it is easy enough to find the conditions of production in the underlying infrastructure of cables and connections. Nevertheless, Lefebvre does point out certain characteristics of the interplay between humans and their environment and, thus, I wish to take my departure from his 'conceptual triad'.¹⁰ Furthermore, I will use the word 'imagination' many times. Spatiality in computer-mediated communication is primarily a question of imagination – we are not able to fully plug in, despite the hard work going on in the field of immersive computing. Instead, we imagine the spatiality, and we do it easily.¹¹ Imagination is also involved when talking about sociality and community, and as Anderson (1983) claims, every community is the product of imagination, even those based on face-to-face meetings. Though I have observed frequent misuse of Anderson (1983) in connection with online community studies,¹² the imaginations about the other, the community, and the definitions of insiders and outsiders are as applicable to cyber social reality as to the construction of the nation state. Fully exploring the range of imaginations associated with online life would be impossible, but the triangle of space may at least offer a systematic for determining where to begin.

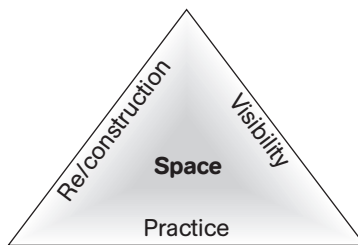
THE TRIANGLE OF SPACE

Like the time triangle presented above, the triangle of space is a wrap-around on the basic triangle of the construction of cyber social reality. Thus, the sides mirror the three categories of culture, structure, and interaction, which in space-related terms are called re/construction, visibility, and imagination. Like my use of Elias (1992) in the triangle of time, the triangle of space is inspired by the categories from Lefebvre (1991[1974]), though the transformation of the categories into cyberspace may challenge some of the deeper connections. Lefebvre's first category is called 'spatial practice' (1991[1974]: 38) and embodies a close association between daily routines and actual routes and networks. This perceived space is the actual space and the movements within; it is the embodied spatial practice of everyday life. We are able to decode (so to speak) this space through spatial practice – by following the actual practices and movements of production and reproduction, the perceived space can be mapped out. 'Representations of

space' is Lefebvre's second category, and this is the conceived part of space – 'the space of scientists, planners, urbanists, technocratic subdividers and social engineers. . .' (p. 38). Representations of space consist of space as we talk about it; it is space continuously and consciously created and recreated through a system of verbal signs (p. 39). The third category in Lefebvre's work, 'representational space', is the most difficult to grasp.¹³ The category consists of space as unconsciously experienced and lived in, and it 'tends towards more or less coherent systems of non-verbal symbols and signs' (Lefebvre, 1991[1974]: 39). As hinted at above, Lefebvre's conceptual triad is not particularly clear or consistent, but the point here is to underline the importance of Lefebvre's unique stand: that we cannot think about social relations without implying space, one way or another. In the following description of the triangle of space, Lefebvre's insights are the foundation upon which the triangle rests. There is also a certain similarity to the concepts in Gotved (2002), even though the categories are named differently.

Taken together, the three dimensions of the triangle of space cover the visible as well as imagined space invoked in online communication and have a special relation to the existence of online communities. This is because of the close connections between a shared space and the attached sentiments of belonging – being an online community member involves imaginations about the actual meeting space, as well as the more fluid social space. However, this connection between community and shared space (to which exceptions can no doubt be found) does not exclude the relevance of spatial imagination within other kinds of online communication. In combination with an awareness of social complexity (discussed above), the triangle of space allows us to talk about the variations within online spatiality, a topic otherwise unusually difficult to capture.

To begin again with the cultural dimension, *re/construction* is defined as the sum of the conceived spatialities – all the ideas about the geography of the vast cyberspace and the spaces and places embedded therein. The parallel with Lefebvre's (1991[1974]) 'representation of space' is rather easy to draw; this is space as we think about it. The imaginations are at once constituted and supported by metaphors linking them to physical reality and well-



• Figure 4 Space's dimensions in (cyber) social reality

known social spaces. Hence, the language and the design are at once a reconstruction of the offline world as we know it, and a construction of a new kind of world with different physical laws. To be sure, re/construction consists of more than just descriptive words – all kinds of virtual objects and images are used to create this imagined third dimension. Thus, re/construction in online communication draws on different kinds of representations – metaphors, objects, keywords, movements, and images are attempts to create a sensed spatiality through discourse on space. These representations often evoke a sense of a recognizable space (in texts as well as in graphics) where offline experiences become useful for moving around. This is the case when the MUD protocol describes living rooms or closets, when newsgroup participants use the small word ‘here’, and when the game world presents a map of the territories. As such, re/construction represents the feeling of three dimensions behind the screen, the conceived geography and perhaps the perceived possibility of moving through an extensive space. As the examples show, the different communication modes available online have different relations to re/construction. Whereas the realm of re/construction is barely relevant to the exchange of emails (apart from the metaphors involved in the basic description of, for example, an inbox), the use of metaphors is a basic condition when participating in online communities such as MUDs or gaming environments. Along the same line, re/construction plays a crucial role with regard to social complexity, because the processes of establishing and maintaining, for example, the borders of an online community are necessary to support a sense of being together, in a special place with certain spatial qualities.

In the structural dimension, the interface is the basic spatial feature in online communication. To distinguish this ontological and computer-coded spatiality from the more epistemic parts of online social life, I have termed it *visibility*. There is a parallel with Lefebvre (1991[1974]) and his ‘spatial practice’, especially concerning the possibilities for actual navigation. The dimension termed visibility lay out the possible movements and represents something in between the intimately known and the very strange. In an online social context, the interface (or, at least, the starting point) is the parochial neighborhood, inhabited by friends, as well as by acquaintances and strangers (Lofland, 1998). Visibility marks the shared space, if any, and the visibility of the communication is important to navigation, interactions and interpretations of all kinds. In terms of online community, a shared space on the screen makes it easier to experience the community’s existence and thereby to connect, and the shared space does indeed draw some of the necessary borders. Visibility can be the game world’s geography, the threads of the newsgroup, or the frame around the chat. In other words, visibility can be more or less sophisticated, but it is defined primarily by the software (programs, protocols, services, etc.) and to a lesser degree by the hardware

(for example, the screen's edges). In sum, visibility is the ontological part of online communication and the relatively narrow field of spatial practice within online life. The design can be simple – texts and paragraphs (scrolling in real time or fixed as descriptions or letters), sometimes supplemented with navigational possibilities (for example, links or advice) or a list of members (online or as such). The design can be elaborate as well, as in MUDs and online games; however, the main point is that visibility is the 'where' in which the communication takes place.

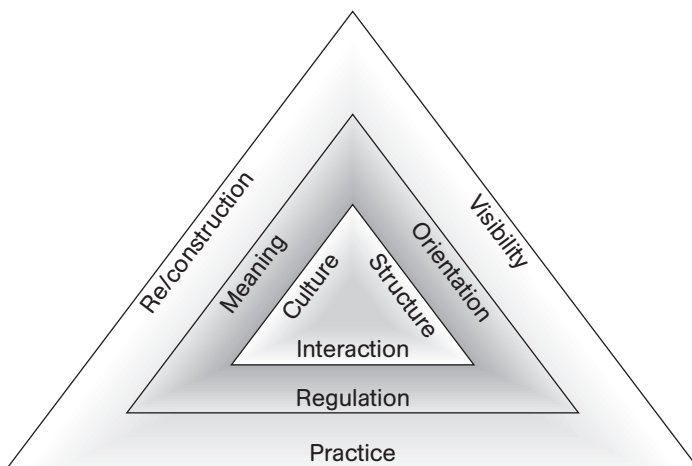
The dimension of interaction includes the spatial relation termed *Practice*, which constitutes and feeds into the interactions. It is at once the social practice (the exchanges and relations), the social-spatial practice (the imaginations of the social context and its demarcations), and the technological practice (the reading from the screen and the actual use of the keyboard, as well as the programs employed). Despite the possible confusion with Lefebvre's (1991[1974]) spatial practice (which in my interpretation belongs with the visible dimension), I wish to establish the parallel between my practice dimension and Lefebvre's 'representational spaces'. This parallel may be the weakest, in terms of reference, partly due to the aforementioned problems with Lefebvre's definitions, but there are certain similarities. This spatial dimension is about living; it is about the interactions that seek to imagine, change, and appropriate the available space. Regardless of the details (or lack hereof) in the visible dimension of text-based communication, ASCII weaves the communication into a rich texture (!) of expressions, slang, smileys, activity words, and so forth, to be comprehended in the ongoing practice. While primarily epistemic, the practice dimension has a touch of the ontological as well – the interactions are visible on the screen. The reading of the texts is simultaneously an interpretation of social meanings, and these interpretations seem to vary a great deal across participants. Therefore, the social imagination and the related practice is fluid and hard to define, even for the members – it is the totality of interactions, interpretations, imaginations, expectations, and demarcations. The discussion threads or the role-playing worlds, the staccato chat or the prolonged exchanges, all establish a sense of connectedness, even more so in the shared spatiality. Practice and imagination are thus the main features of an online community and are attractive in themselves – when the newbies become regulars, friendships and interpersonal relations seem to be at the core of this continued interest. Togetherness and the possibility of social value attract us. In sum, practice is mainly epistemological and based on interpretations, derived from the visible interactions and our imaginations about others. Practice is the complex of computer-mediated human sociality within cyberspace, defined primarily by those participating, and by no account a fixed or limited space. Practice (and again, imaginations) are

certainly the most attractive parts of the deal and, thus, central to explaining the popularity of online communities (among users and researchers both).

Departing from the basic categories (again: culture, structure, and interaction) in the first triangle, the imaginations and representations of online space are here claimed to be central to the processes of making sense of the non-physical reality. The triangle of space turns the different ways of online spatial thinking into a coherent framework, underlining the importance of a varied spatial focus. The re/construction and the practice involve a whole range of imaginations about spatiality; imaginations thoroughly integrated into the human way of experiencing and expressing the environment. The practices are supported (and often challenged) in the interface, where the actual representation of a given space is visible, and where the structural limitations inherent in the ontology of the interface are perceived. Together, the three dimensions make up the peculiar online spatiality, on the one hand, likening it to other kinds of spatial experience and, on the other, setting it apart as something unique. It is no wonder that the whole concept of cyberspace is able to capture our imaginations – the name in itself embeds the double construction of existence and non-existence, of spatiality without physical proof.

THE MATRIX OF CYBER SOCIAL LIFE

With the triangles of time and space, the matrix is now complete: the basic categories of culture, structure, and interaction are embedded in time and space, and the three triangles together cover the construction of cyber social reality. The systematic of the model allows us to describe – and thereby begin to analyze – any social phenomenon online, with due respect to the



• Figure 5 Cyber social reality embedded in time and space

immediate context. By integrating the conditions of technology into the most basic constructions of cyber social reality, the matrix is a valid systematic for describing the constant interplay between the structural and the cultural aspects, as well as the variations within the interaction terms. The connections between the three basic categories and the categories related to time and space make the matrix well defined and yet flexible with regard to analyzing different patterns of online communication. In practical terms, the triangles can be used separately, tracking different dimensions of, for example, space within the same online context, or a certain phenomenon can be followed across time and space (so to speak). One could, for example, focus on a structural element (like, the communication mode) and relate it to the time aspects (the regulations) and the representation in spatial terms (visibility), thereby establishing a thematic framework by using the matrix from the inside out in a specific direction.

Another potential of the matrix of cyber social reality is that it can bring the extant practical and theoretical studies of online communication to another level of abstraction, thereby establishing a level of meta-theoretical knowledge in the area. The matrix's systematic approach may be the key to opening, for example, ethnographic case studies on online communities to comparability across differences in protocols and culture. At least some studies have already dealt with questions of cyber social reality in different manners (sometimes even considering time and space), and hence, the matrix offers the possibility of organizing the same set of empirical data differently. For example, in the groundbreaking study by Baym (2000), the stories of the newsgroup *rec.arts.tv.soaps* (*r.a.t.s.*) are organized into three categories: *r.a.t.s.* as an online community, with a focus on the medium; *r.a.t.s.* as an audience community, with a focus on the texts; and, *r.a.t.s.* as a community of practice, with a focus on the patterns of interaction (2000: 197). I will argue that this way of organizing the stories mirrors the basic triangle (Figure 2), in which culture (the texts), structure (the medium), and interaction (the practice) all have a say in the complex picture of cyber social reality. Likewise, in Markham's (1998) study of experience online, she concludes by using a continuum (tool – place – way of being) to describe the participants' understanding of and interactions with cyberspace (1998: 85). This continuum highlights different interpretations of going online, and I would take it a bit further by arguing that the participants are putting their focus on different sides of the basic triangle (again, Figure 2). Those who see their participation as something akin to using a tool are focusing on the structure (guided by orientation and visibility), those who sense cyberspace as a place are into the culture (particularly the re/construction metaphors), and those who experience their online presence as a way of being are immersed in the interaction. Thus, in their attempts to cover every aspect of online interaction and experience, both Baym and Markham are evoking

the same basic categories as the matrix. This should not be a surprise – after all, the original triangle is introduction-level sociology – but the acknowledgement points to the potentials of opening up the studies by highlighting areas for comparisons. I certainly do not imply that these two impressive studies could be improved by using the matrix. I suggest, rather, that the matrix makes it possible to read the central thematic in new ways that potentially expand the self-enclosed case study towards a higher degree of generalization. For some studies, the matrix may not add anything new besides a reorganization of the presentation, while other studies may fall short on one or two of the triangle's sides. In any event, application of the matrix will heighten our awareness of time and space also in cyber social life, and such a systematic approach can allow us to make thicker descriptions of the great variety of cyber social reality without losing sight of the common denominators.

PERSPECTIVE

The matrix is perhaps at odds with the newest phase in online communication research, where the focus is on the ever-blurred relation between online and offline presence (see, for example, the brilliant monograph by Kendall, 2002). I still, however, see a need for a more systematic approach to cyber sociality as a phenomenon in its own right. This said, I also see cyber social reality, and thus the matrix, as firmly grounded within our modern urbanized culture. Even the most isolated places are drawn into the urban culture, through media and imagination, and thus, the urban cultural space is not restricted by the city limits. In short, urbanism can be characterized as highly mediated, based on networks as the primary organizational form, where the actual space is filled with strangers and where one must navigate with a certain degree of care. The first sociological analysis of urban life (for example, Simmel, 1950[1903]) can be read today as descriptions of online life, with the same themes of alienation, compression of time and space, anonymity, and the evolvement of special competencies. Likewise, the urban micro-sociology of Lofland (1973, 1998) uncovers the street-level interactions within the metropolis, and in these interactions are found the basic competencies from where the online interaction took off (Gotved, 2003). Running the risk of stretching the analogies too far, one could say that cyberspace is folded into urban culture as just another neighborhood, and that the crossing of borders is an everyday activity, non-dramatic and pursued without awareness. As stated above, I find that this border crossing constitutes a threshold phenomenon worthy of exploration, especially because it is impossible to fully distinguish the crisscrossing influences from offline to online and back again. Nevertheless, gaining a better understanding of the online part of modern life is still highly relevant, and hopefully, the matrix will turn out to be a

useful tool for exploring cyber social reality, constructed as it is from communication technology, spatial imaginations, temporal relations, and above all, the participation and engagement of thousands of people.

Notes

- 1 Following Markham (1998: 21), I am not stipulating any notable distinction between online, cyber, virtual, and computer-mediated. These terms are still up for discussion, and I will not provide a more detailed definition.
- 2 With the increase in wireless/mobile information and communication technology, the perceived border between physical space and cyberspace is rapidly disintegrating. However, for the sake of clarity, the presented framework concentrates on phenomena connected with the computer-mediated realm.
- 3 According to Latour (1992) and the tradition of Science and Technology Studies, we have to accept that our everyday actions are neither purely human nor purely technological. Therefore, and to acknowledge that the actor may be human as well as non-human, the term actant is proposed (Akrich, 1992).
- 4 In this sense, the interaction term mirrors the different definitions attached to it by research traditions – where sociology takes interaction to be synonymous with contact between humans, informatics focuses on the human-computer interaction (HCI), and the humanities view interaction as the meaning that evolves from the meeting of a human and a text of some kind (Jensen, 1998). Taking the triangle's systematic to another level of abstraction, we could say that the sociological definition of interaction is at its base, the definition from the humanities involves the cultural level, and that informatics is concerned with the structural aspects.
- 5 Chronos symbolized time as something extended yet moveable (inherent in the later term 'chronometer') and Kairos time as something tied to the moment, the timing of doing right. These views constitute our first clue as to the ambiguous status of time – one time god was just not enough.
- 6 I am immensely grateful to one of my anonymous reviewers, whose useful philosophical comments made me realize the broader importance of Augustine's time-thinking.
- 7 I believe Elias to paraphrase Augustine, when he begins his time-essay: "I know what time is if I am not asked", a wise old man once said, "if I am asked, I no longer know" (Elias, 1992: 1).
- 8 That is, either in real time (like normal speech and chat) or extended in time (like letter writing and emails).
- 9 Further information can be found on www.swatch.com and <http://newearthtime.net>. The main purpose of both is to synchronize the world time into a calculable and shared global time, thus overcoming the troubles of counting time zones and the like.
- 10 By introducing a third category of 'otherness' into the dialectics of space, Lefebvre made a conceptual move. It was later followed by, for example, Soja (1996), who, according to Shields (1999: 152), did not fully work out the logical structure of the triadic form.
- 11 The related experience of presence, even in environments not to be confused with physical reality, is a whole area of study in itself – see, for example, www.presence-research.org
- 12 Anderson's book title, *Imagined Communities*, in itself piques many imaginations. Nevertheless, Anderson analyzes a real geographic area (the nation state) and the

invisible/imagined community (the nation) within, whereas the online communities are exactly the opposite – an imagined area with a real/visible community.

- 13 Even the translation of Lefebvre's *The Production of Space* (1991, by Donald Nicholson-Smith) from French into English has been disputed, and Shields (1999: 164–5) proposes 'spaces of representation' instead.

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STINE GOTVED is a part-time associate professor at the Department of Media, Cognition and Communication, University of Copenhagen, Denmark. She is a cultural sociologist and obtained her PhD with a dissertation on cybersociology. Her fields of interest include online communities, mediated sociality, time and space relations, mediated interaction, and urban sociology.

Address: Department of Media, Cognition and Communication, Film and Media Studies, University of Copenhagen, 80 Njalsgade, DK-2300 Copenhagen S, Denmark. [email: gotved@hum.ku.dk]
