Metaphors of Synchrony: Emergence and Differentiation of Online Chat Devices

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Abstract

Through a detailed account of the history of online chat devices, this article shows the emergence, over time, of two distinct interactional formats underlying these social media. They may be captured by two generic metaphors of synchrony: *conference* (a gathering in a virtual place where unfocused interactions and group sociability occur) and *copresence* (where practices are centered on the sustainment of contact between individuals who know each other). Internet Relay Chat (IRC) appears as the archetype of the conference format. This notion of chat involves the existence of a relatively persistent shared space—conjured up by various specific metaphors: room, channel, and so on—inside which users get together and through which they are able to find other users, with whom they may weave electronic social ties that may possibly lead to offline relationships. The other format is associated with instant messaging (IM) devices, on the model of "ICQ" software. Although there seems to be a decline in interest for devices based on the former format, those based on the latter benefit from a growing popularity, possibly indicating deeper sociological implications.

Keywords

online chat devices, instant messaging, synchronous computer-mediated communication, interactional format, conference metaphor, copresence metaphor, social media history

Introduction

Online chat—or simply chat—refers to the use of a computerized device in order to exchange text messages in a synchronous manner. A computer-mediated communication (CMC) device is said to be synchronous if it involves the simultaneous engagement of interactants in the communication process, likewise a phone conversation, and contrary to email communication, a typical example of *asynchronous* CMC.[1] Because a display screen is always part of the interface of such devices—even on mobile phones—I propose to equate this "social synchrony" with the requirement of the interactants' simultaneous *presence* "behind" their respective screen. In other words, it is a form of *copresence* without any reference to physical space (Zhao & Elesh, 2008).[2] It should be also noted that Internet users tend to restrict the term *chat* to devices based on text, in contrast with those promoting interaction by voice, video, or through graphic avatars. Besides, actors themselves tend to reserve the word "chat" for devices designed for *group* interaction, as exemplified by this definition by an Internet Relay Chat (IRC) veteran, who played an active role in its development:

> a chat system [. . .] is a form of group communication where people sitting at a networked computer in different locations on the planet get together in a virtual room

and speak with each other typically by typing text, at least these days. The word "chat" alludes to the typical relaxedness of socialization going on in chatrooms. (Loesch, n.d.)

For long, online chat has been relatively neglected as an object of CMC research, especially if compared with the abundant literature on asynchronous CMC (Usenet groups, asynchronous conferences, email, weblogs, etc.). Reasons for that might be that scholars were more familiar with the latter, and that interactions are persistent hence generating convenient corpuses, and also that discourse tends to be far more "elaborated" in asynchronous CMC, therefore offering more affordances to discourse analysis. Lately, a growing scholarship has been devoted to chat practices over instant messaging (IM) systems (see Quan-Haase, 2008). That said, several aspects of online chat, as a *communication practice*, have been studied: linguistic features, conversation analysis,

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and ethnomethodological aspects (Danet, Ruedenberg, & Rosenbaum-Tamari, 1997; Have, 2000; Herring, 1999; Ooi, 2002; Rintel & Pittam, 1997; Velkovska, 2004; Werry, 1996); social interaction, in a goffmanian perspective (Bays, 1998; Mattio, 2004; Verville & Lafrance, 1999); community and identity construction (Bechar-Israeli, 1995; Bruckman, 1992; Kendall, 2002; Markham, 1998; Pastinelli, 2007; Reid, 1991); uses in educational contexts (Hudson & Bruckman, 2002; Yardi, 2008); and, more recently, its role in social network sustainment and development (Best & Krueger, 2006; Quan-Haase, 2008). However, very little attention has been paid in this scholarship to the history and emergence of chat, with the exception of brief and partial accounts to introduce the object of study—often a specific system or application. It is not addressed either in historical literature on the emergence of communication networks, such as Janet Abbate's (1999) comprehensive effort. The overall goal of this article is therefore to provide a first sketch of a genealogy of online chat, from the point of view of *devices*, that is, the sets of machines, computer programs, interfaces, and uses that become termed as a distinct entity like *MUD*, *IRC*, *webchat*, *IM*, and so on.[3]

Writing about the origins of chat is not an easy task, because the narrative we attempt to produce depends on the definition of a relatively labile object—online chat. In fact, two essential aspects of the form of communication defined above pertain to a particular technical lineage: *written* communication through a technical device and mediated *group* interaction. This leads me to retain amateur radio and the cibist movement,[4] telephone party-line experiments,[5] and written teleconferences via teletype[6] as precursors of online chat, despite the lack of computer component.

One difficulty, when trying to trace the origins of chat, comes from the multiplicity of innovation sources. As Theresa Senft (2003) puts it,

> Because of simultaneous developments in mainframe-based time-sharing systems and in microcomputer-based bulletin-board services, chat has never followed a singular line of evolution. Thus, the answer to "how electronic chatting began" often changes depending on who is asked, and when. (p. 70)

In the United States alone, Kerr and Hiltz (1982) list a long series of CMC and computer-supported cooperative work systems developed in the frame of scientific projects supported by large institutions such as the National Science Foundation—or more modest ones like the Institute for the Future—among which EMISARI,[7] EIES,[8] FORUM, and PLANET[9] stick out by their fame. Designed for the most part in the early 1970s, in a context of energy crisis which led organizations and governments to turn to alternate options to physical travel, their primary function was to support online conferences between geographically scattered individuals. They would often feature synchronous CMC tools for dyadic or group communication. Though not designed as conference systems, NLS[10] and PLATO[11] are noteworthy earlier, precursory systems aimed at networked cooperation, and featuring CMC tools. Besides, chat as a specific form of CMC has existed as a component of larger devices long before one began to conceive online chat as a form of CMC per se and dedicated computer applications to it, or even protocols. What we tend to see today as distinct "modes of communication" or genres were not perceived so by designers and users of early messaging systems:

> Today we tend to think of email, IM, and discussion forums as distinct methods of communication, but there are no obvious or inherent boundaries between them. Systems have often blended aspects of these approaches, for example mixing public discussion areas with private messaging, blending word processing with email, or offering real-time chat features as well as file exchange. (Haigh, 2008)

In the following sections, I will try and avoid a priori definitions and categories of "chat," and follow instead the various implementations of text-based synchronous CMC, letting differentiation emerge if and when it occurs. The notion of metaphor turned to be helpful as an analytic tool in this mapping exercise, which led me to propose to distinguish two main "interactional formats" to which chat devices may be related: *conference* and *copresence*. In the last section, I will argue that these two interactional formats correspond to distinct, contrasting models of sociability.

The Early Days of Synchronous CMC: From the "Instant" Message to the Chatroom

In its most primitive form, synchronous CMC leveraged the LINK command on the TENEX system developed by BBN in the late 1960s. It simply consisted of linking two terminals (or consoles) together so that whatever one user typed would be printed/displayed on both terminals. If both were typing at the same time, their messages would appear interlaced on a character by character basis,[12] resulting in an unintelligible text. That was also the case with the very first instance of the "Talk" program which appeared on the PDP-11 minicomputer series, launched by DEC in 1970. So that just like in oral conversation, one of the interactants had to interrupt himself in order to let the other one speak. Hafner and Lyon (1996) mention that Leonard Kleinrock, an ARPANET pioneer, recalls having used "Talk" in 1973 to have an informal conversation with his friend and colleague Larry Roberts, then attending a conference in England, while he was himself in California. Before establishing the communication via

ARPANET, he used another program to locate his friend and get a network address; "enough information for him to tap his colleague on the shoulder electronically from L.A.," the authors note, thus likening Kleinrock's technical tinkering to the use of a modern IM software.

The Invention of the "Instant" Message and Instant Messaging Systems

The concept of "instant" message predated the notion of real-time interactive conversation (chat), and probably email as well, to which it is tightly related as an innovation. The instant message differs from the email by two unique features: just like the error system message, it is intrusive and it requires immediate attention without prior solicitation (see DellaFera et al., 1988). Second, as its name suggests, instantaneousness does not refer only to its speed of transmission; it *pertains* to "now." Exchanged in a "near-synchronous" interaction (Licoppe, Proulx, & Cudicio, 2009; Quan-Haase, 2008), its relevance is an inverse function of the time between its composition and its reading.[13] This double specificity of the instant message situates its usage in the frame of social synchrony (copresence).

The instant *message* should be distinguished as a communicational genre or format from instant messag*ing* as a practice or social media. IM comprises other functions than mere transmission of messages, such as the notification of the recipient about the delivery of a new message—"pop-up mechanism" (Quan-Haase, 2008)—and presence/availability awareness and management associated with the "contact list" (see Quan-Haase & Collins, 2008). These functions are at least as important *per se* as is the synchronous CMC feature (Larson, 2003; Senft, 2003) and tend to transform the CMC software into a surveillance device (Quan-Haase & Collins, 2008, p. 539). Licoppe, Proulx, and Cudicio (2010) define IM as mainly text-based, almost simultaneous, and usually hybrid (client/server and P2P) type of communication, the specificity of which is copresence management.

Although it is not unusual today to see people in the same room exchanging electronic messages in real time,[14] it seems that the need for implementing synchronous CMC functions into computers emerged when terminals began to spread out of the immediate surroundings of the central unit, at the scale of an institution or even between several sites. Witnesses of the time[15] recall that most time-sharing mainframe systems allowed the sending of instant messages from terminal to terminal on the same computer and between terminals linked to different machines provided, they were interconnected.

Tom Van Vleck (2001) situates the debut of the instant message in the mid-1960s, first on CTSS system,[16] then on Multics, predecessor of Unix. In general, it was the creative appropriation by users of an existing feature (e.g., an "alert" message during the printing of a document, on CTSS). Jeff Kell's (1987) own experience is a good example of this phenomenon of "spontaneous" invention of the instant message by "hijacking" another function. He recalls his discovery of online chatting while he was working as a student operator on a remote IBM 360 located at another University of Tennessee campus, a screenless teletype-like console:

> One evening, a strange message came over the console, something like:
> 　*$21.05.31 HASP0254I 0,'HAVING FUN LOOKING AT THE JOBS FOR MEMPHIS?'
> 　Well, looking up the error code for HASP0254I, I discovered it was an operator message, and the "0" meant it came from the host system which is remote number 0 (we were remote 4). I had just received my first interactive message of my life. I looked up the command to send back a reply and entered:
> 　$DM0,'NOTHING ELSE TO DO UNTIL CAVANAUGHS BIG LIST FINISHES PRINTING'
> 　Now this WAS fun. We talked about 30 minutes. He introduced me to the other night operators at the other remotes. It certainly beat watching the 1403 eat paper for hours, which was about all there was to do since I worked nights and was the only person there. Thus, even in the days of cards, punches, and dumb printing consoles, chatting was possible.

Deemed the ancestor of IM, the "Talk" program made its official entry in the set of Unix commands in 1983, with version 4.2 of the Berkeley distribution (4.2BSD)[17]—the first featuring the TCP/IP network protocol underlying ARPANET, then Internet. Several variants followed, including one offering multiuser conversations, "YTalk", similar to "Phone" on DEC VAX/VMS systems (Cruz, n.d.). However, as pointed out by Darren Reed (coauthor of the *Request for Comments* [RFC] describing IRC protocol), those programs had no interoperability and it was sometimes impossible to talk to somebody using a computer with a different version of Unix (Reed, 1992).

It was in the late 1980s that computer scientists laid the theoretical foundations of the IM concept (calling it a "notification service"), in the frame of the Athena Project at the Massachusetts Institute of Technology. This effort led to the first IM system, "Zephyr" (DellaFera et al., 1988), still in service today in several universities. As emphasized by Anthony DellaFera et al. (1988), the fundamental principle underlying this class of devices is that the flux of messages is centered on a *person* (via his or her identifier), rather than around a *place* (a physical server address). It is up to the system to locate the recipient in the distributed environment. Together, these features define a communication structure or pattern of interaction that I will call an *interactional format*, borrowing the term from conversation analysis. Years later, in 1996, an Israeli company called Mirabilis launched the first commercially successful product based on this concept:

ICQ ("I seek you"). Mirabilis labeled it "instant messaging" and filed a patent request in 1997. The patent was granted in 2002 to America Online (AOL), which had acquired the Israeli start-up in 1998. AOL's pretention to the IM concept authorship is contested, notably by some PLATO *aficionados* (Dear, 2002), who see it as a mere copy of the TERM-talk feature (see below), left aside the Zephyr system.

The First Conferencing Systems

One of the very first synchronous CMC applications used for multiparty communication in U.S. universities was "Talkomatic" on PLATO. This program, created by Doug Brown in 1973, foreshadowed current chat systems in many ways. The screen was split in as many horizontal "windows" as there were participants. A more sophisticated version, coauthored with David Woolley, implemented the concept of "channel" (Woolley, 1994). Each channel could have up to five "active" participants whose messages could be read by an unlimited number of "lurkers" (called "monitors"), unless the channel was "protected." As noted by Woolley, this "nonofficial" program became very popular among PLATO users—mainly students:

> Talkomatic was an instant hit. Soon it was logging over 40 hours of use per day. It was not officially part of the PLATO system software, and in fact it was used mostly for what administrators would consider frivolous purposes. There was no way to contact a specific person to let them know you wanted to talk, so it was *more like a virtual water cooler than a telephone substitute* [italics added]. People would hang out in a channel and chat or flirt with whoever dropped by. (Woolley, 1994)

This unexpected and sudden popularity led PLATO designers to introduce the "TERM-talk" function in December 1973 (Dear, 2002), but it was restricted to one-on-one conversations between two users. Very similar to the IM interactional format, the exchange of messages would not disturb the running application, as it used a two-line reserved space at the bottom of the screen. PLATO administrators advertised that function as a way for the user to get help while she or he was using a program.

Although PLATO designers were not enthusiastic about the possibility for users to have real-time group conversations, conversely it was considered a key feature of the EMISARI system, as its "Party-Line" component—probably the first chat device worthy of the name. Party-Line allowed up to 15 persons (Hiltz & Turoff, 1993), and probably more,[18] to have a "simultaneous written conversation" (p. 55), with almost no restriction of space—10 lines were allotted to each message, compared with one line only on PLATO (M. Turoff, "Re: About Party-Line and early chat systems," personal

communication via e-mail, November 27, 2008). Furthermore, it was possible to "scroll back" to read a part of the conversation again, and even to save and print the whole conversation. What is more, EMISARI and its successor EIES could be accessed through ARPANET, opening them to a wide community of potential users some of which would become application creators in their turn.[19] For Turoff, far from being frivolous, synchronous conference via computer was meant to replace "party-line" phone conference, both in terms of costs and in terms of quality of the output, provided that proper group management is exerted by a moderator.

The Metaphors of Chat

As suggested by the names of the programs, or the analogies used to describe them, several metaphors have inspired chat systems' developers. They evoke social situations and devices which predated online chat and act as referents for it. They provided, through imagination, a guidance that was needed to help users overcome the "austerity" of the computer interfaces of the time (Barlow, 1991, p. 19, cited in Grier & Campbell, 2000, p. 32).

One such metaphor is the Citizen's Band (CB) and its "channel" concept borrowed from the radio vocabulary. Released in 1980, the CompuServe "CB Simulator" service was a chatting application which quickly became, with no publicity, CompuServe's most successful service with its domestic user base. As its name suggests, "CB Simulator" was designed around the CB metaphor. Just like CB, it had 40 "channels" to which users could tune in to chat. When they became saturated, CompuServe added new "frequencies", including an "adult" one. Although CompuServe cannot claim the authorship for the channel concept—already in use on PLATO—it popularized the metaphor which would be used by other systems like BITNET Relay, IRC, and ICB.

Another metaphor is the metaphor of *place:* the bar, *café* or the water cooler corner,[20] where informal chit-chat usually occurs—hence the term *(chat) room*. Lori Kendall (2002, pp. 3-4) uses the "pub metaphor" in her ethnography of a specific room in a MUD (see below), but not without mentioning that the analogy is used by participants themselves. Other metaphors were used, like the "computerized" conference and the phone call, frequently featured in the names of early applications. In some cases, the metaphor reflects the internal structure of the device. For instance, Kortti (1999) points out that

> Many IRC purists frown at the metaphor of a "room" in connection with a channel, because literally a channel is a stream of data inside a wider stream of all conversations on all channels, being transmitted constantly through the IRC network.

The Emergence of Chat as a Social Space

The Game Roots of Chatting and the Metaphor of Place

Besides CompuServe, other online services would specialize themselves in game applications. Founded in 1983 by two General Electric employees, PlayNet was a pioneer of its kind. Using a proprietary protocol—like most online services, it was meant for owners of the Commodore 64, a "home" computer which had widespread in North America. PlayNet offered various online games. One of them was a very popular chess game the particularity of which was that it allowed players to chat while they were playing; they could also exchange emails and instant messages ("On Line Messages").[21] The service was bought out in 1985 by Control Video Corporation, which renamed it QuantumLink (Q-Link). Q-Link flagship was a massively multiplayer online game and persistent graphic universe called "Habitat" and created by Lucasfilm in 1986. Designed to host up to 20,000 users simultaneously (Morningstar & Farmer, 1991), it was a forerunner of The Palace and Second Life. Indeed, a key aspect of the game was the sociability between users, who were represented by avatars in two dimensions. Their conversations were displayed in balloons (Yakal, 1986). However it was a test project and the experiment ended in 1988, but the service provider kept flourishing. In 1991, it changed its name for America Online.

In 1978, Roy Trubshaw and Richard Bartle created "MUD"—the prototype of programs of this kind—on a computer at the University of Essex, United Kingdom. The acronym[22] meant: "Multi-User Dungeon." The word "dungeon" does not directly refer to the role-playing game *Dungeons & Dragons* as can often be read, but to another program, DUNGEN, a variant of the ZORK game that Trubshaw was keen of. Along with ADVENT,[23] it was a good representative of early online adventure games (Bartle, cited in Shefski, 1995). It was therefore the first *multiuser* version of an online adventure game, with yet another characteristic: it was *persistent*. Very quickly, social interaction tended to prevail over the game features. As Bartle (1990) puts it, "the game was originally little more than a series of inter-connected locations where you could move and chat." Commenting on an early version, he notes: "At that point, there was no objective for the players, and only primitive communication." Shefski (1995) synthetizes the technical nature of a MUD—and the very essence of a chat device, I think—by calling it "a computer program that applies the principles of shared memory to the act of communication" (p. 2).

In 1989, Jim Aspnes, then a student at Carnegie Mellon University, got the idea of making a "simplified", minimalist MUD, with all the classic role-playing game outfits stripped (quests, monsters, . . .). TinyMUD was a "social" game putting more emphasis on interaction and cooperation among players than on fighting (Stewart, 2000). With the opacity of the code of first generation MUDs, its simplicity, and portability earned it a wide diffusion and a numerous offspring, such as MUSHes[24] and MUSEs,[25] sociability-oriented "virtual environments" closer to chat devices than to online games.[26] A divide formed between MUD enthusiasts, who were more interested in battles and rivalry between users (as it was the case with LPMud, released at the same time as TinyMUD), and those seeking social spaces more oriented toward conviviality (Shefski, 1995). In the early 1990s, MUD variants devoid of the game reference appeared, called *talkers*. In a way, they were MUDs in which all adventure game related commands had been removed to retain only communicational features and the spatial/architectural metaphor of the "room"—a surprising return to origins! The term *chatroom* therefore constitutes a legacy from MUDs, but from users' point of view, it is functionally equivalent to a "channel."

Centralized Chat Devices

Other single-server chat devices were developed along similar principles but without any relation to MUDs. ForumNet—later called ICB for "Internet Citizen's Band"—was a monoserver chat application created in the spring of 1989 by Sean Casey. Soon after he released the "fn" software client, it spread to other American universities. All users had to connect to a single server running a closed-code program located at the University of Kentucky (Casey, 1990). It is not clear whether Casey had heard about IRC, released a few months before but still quite confidential at the time. Still, ForumNet shows many similarities with it, as it does with BITNET Relay (see further on). Channels are called "groups," and the channel operator, a "moderator." It is possible to create new groups at will, to specify levels of privacy for groups, and to swap private messages.[27] Compared with IRC, ForumNet looks simplistic: A group can have only one moderator at a time, a user can be a member of one group only at a time, and the client is designed for a specific server. Yet very quickly a social life emerged around it, along with a strong community spirit and an esprit de corps, as shown by the users' mobilization after the San Francisco Bay earthquake in October 1989 (Rudd & Luini, 2003). The fact that most users were located in the United States might explain their propensity to get together at face-to-face parties (Rudd & Luini, 2003). Hauben and Hauben (1997) report an enlightening testimony on how users of these early chat devices valued the social bond being built in the small electronic communities that emerged from their usage:

> When I started using ForumNet [. . .] back in January 1990, I was fairly shy and insecure. I had a few close

friends but was slow at making new ones. Within a few weeks, on ForumNet, I found myself able to be open, articulate, and well-liked in this virtual environment. Soon, this discovery began to affect my behavior in "real" face-to-face interaction. I met some of my computer friends in person and they made me feel so good about myself, like I really could be myself and converse and be liked and wanted. (p. 17)

Therefore, the burgeoning of chat devices during the years 1980-1990 seems to result from a desire by early users to appropriate real-time CMC in order to develop social ties on networked computer systems, almost right from their inception.

The Rise of Networked Chat Infrastructures

BITNET relay. It is on the BITNET network, in 1985, that the first chat "infrastructure" connecting several servers together was born: BITNET Relay—or simply "Relay." Credit for it goes to Jeff Kell,[28] who was then working at the University of Tennessee at Chattanooga. He relates vividly and with a bit of nostalgia the rise and fall of this sociotechnical device which foreshadowed the IRC (Kell, 1987). The concept of "relay"—which may be seen as a metaphor evocative of hertzian broadcasting—seems to have imposed itself heuristically as a solution to the saturated bandwidth of the computers forming the nodes of the BITNET network. In a note dated February 26, 1985 and sent to all BITNET administrators, Henry Nussbacher, then head of the Network Information Center (BITNIC), criticizes chat servers operating on BITNET, putting forward that they constituted a serious threat for the network. His arguments are meant to be purely technical, but Nussbacher does not conceal his poor opinion of this use of the network:

The bulk of data being transferred over TP *[twisted pair]* lines becomes a hackers CB world. High school students and college undergraduates discuss everything from dirty jokes to sex to crashing the VM system. (Nussbacher, reproduced in Condon, n.d.)

Interestingly enough, Nussbacher compares online chat to CB, but his analogy is not limited to technical aspects; he likens two social worlds, the hackers' and the cibists', with an obvious negative connotation. One of the targeted students noticed it, and sent back an eloquent reply[29] in the shape of a defense of online chat, its legitimacy and its innocuity. He notably proposes that "by generalizing that conversations consist of obscene messages, [Nussbacher is] censoring and undermining any and all productive conversations as well." Legitimacy of contents, positive socioaffective outcomes, collaborative learning, and collective intelligence

are a few themes of this vibrant plea in favor of chat. The exchange between Nussbacher and this student can be considered exemplary as it typifies the positions that will be often held in controversies opposing proponents and opponents of chat on campuses.[30] As Quan-Haase (2008) argues, in general, sociability-oriented chat devices implemented in academic contexts do not benefit from institutional support[31]; at best they are tolerated by the authorities.

It is not thanks to its intrinsical qualities that Relay imposed itself as a reference chat system. It was *imposed* by universities belonging to the BITNET consortium as the only—apart from a few exceptions[32]—chat device permitted on institutional systems. It allowed them to better monitor chat activities on the one hand, and to prevent the implementation of less bandwidth-savvy monoserver systems on the other. Other chat systems were experimented but nipped in the bud by system administrators. Kell accounts for the decline of Relay by pointing at its ever-growing popularity with users, generating a data traffic deemed futile therefore illegitimate by computing department heads of the universities hosting the relay servers, because it was competing with the traffic generated by "legitimate" services—namely mailing lists and file transfers, the latter constituting the primary mission of the network.[33] Thus, BITNET chat applications are an example of network appropriation by users. As Janet Abbate (1999) observed,

like the ARPANET, BITNET and USENET were examples of how network users could take tools that had been designed for computation and adapt them for personal communication. (p. 202)

Internet Relay Chat. The "IRC" program was created by Jarkko Oikarinen, toward the end of August 1988, at the University of Oulu, Finland.[34] Oikarinen was not satisfied with the small "rmsg"[35] program that Jyrki Kuoppala had just written at the Helsinki University of Technology—it notably lacked an implementation of the channel concept. He also bemoaned the bugs in "MUT" (Multi-User Talk), a program created by a fellow student at University of Oulu, Jukka Pihl and based on a monoserver architecture. He therefore decided to write his own program and chose a distributed client-server architecture just like BITNET Relay. In fact, the core concepts and terminology of IRC were borrowed from Relay (nicknames, channels, "classes" of operators . . .). Even the main commands and their format were alike. Toward the middle of 1989, there were about 40 servers online, with an average of 10 simultaneous users at peak hours. But contrary to BITNET Relay were there was a single network whose routing and coordination was decided and enforced by a central authority reflecting BITNET centralization, the IRC servers community quickly fragmented into different networks corresponding to different social and technical philosophies of

what IRC and chatting should be like (see Latzko-Toth, 2010).

As Elizabeth Reid put it, we saw the formation of what Hiltz and Turoff had termed *electropolis* (Hiltz & Turoff, 1985, p. 688, cited in Reid, 1991), namely electronic micro-societies emerging from the common use of CMC devices by hundreds or thousands of people. In July 1993, EFnet, the main IRC network at the time, spread in 48 countries representing approximately 20,000 regular users on 211 servers, mainly located in the United States and Europe (Anneling, 1993). Every year, fall brought in a new wave of "digital immigrants," mainly students discovering IRC just after they got their first Unix account. Some IRC networks, like Undernet, devised strategies to attract new users, such as mass-posting an installation script on Usenet newsgroups.[36] Others, like DALnet, relied on user-friendly features (like channel and nickname registration) to seduce a less technically skilled user base (Dalila, 2000).

The four main "generalist" IRC networks—EFnet, IRCnet, Undernet, and DALnet—were well-established at the turn of 1996, and their development has not stopped ever since. They are not alone though. Numerous "specialized" networks have emerged, based on geography or topic.[37] Some are direct competitors in terms of user base, notably the gaming-oriented QuakeNet and GameSurge.[38] QuakeNet is the largest IRC network today, but Freenode, aimed at the open source community, is the only major network still increasing its user base.[39]

The Elusive Standard of Online Chat

The success of IRC as a computer-supported conference system raised the interest of a few commercial firms. In March 1996, WebMaster, a California-based company, released its own IRC server program, ConferenceRoom, based on proprietary code but compatible with most existing client programs and networks.[40] WebMaster also provided a Java interface, which allowed website designers to embed a chat applet in their site, sparing users the necessity of installing a specific client program. Although "web-chats" already existed, they were particularly crude. WebMaster allowed them to leverage the power of the IRC protocol. Webmaster's own IRC network, WebChat, quickly became one of the most popular, much helped by its user-friendly interface.

Microsoft was also interested in IRC, but it followed a more ambitious approach, asking its research department to develop an IRC client unique in its kind: "Comic Chat." Launched in 1996 with Internet Explorer 3.0,[41] Comic Chat added its own features to the IRC protocol, allowing it to visually represent the interaction among users in the form of an interactive comic strip (Kurlander, Skelly, & Salesin, 1996). Compared with its forerunner, Habitat, and with its competitor, The Palace, the program originality was not only the persistence of conversations, but also its ability to infer facial expressions and body postures from the contents of messages. With version 2.0, released in 1997, Comic Chat became "Microsoft Chat."[42] The software offered two usage modes: graphic ("comic strip" style) or textual ("IRC" style[43]). The latter would gradually prevail. At the same time, Microsoft set its own network of IRC servers, named "Microsoft Network Chat," and it eventually opened it to other IRC client users. Microsoft hired volunteers and a few paid staff to monitor the system, and created its own nomenclature of sociotechnical roles. But due to the huge growth of its network—which eventually took the name of MSN Chat, the Redmond firm later decided to outsource the monitoring of its chat spaces.[44]

In April 1997, the Internet Engineering Task Force (IETF[45]) created the IRC Update Working Group (IRCUP) which gathered various actors interested in IRC standardization, like it had happened previously with other Internet services. One of the objectives of the process was to develop a perfectly scalable system, suitable both for private mini-networks (at the scale of an organization) and for vast public networks able to accommodate up to "one million users on 100,000 channels."[46] Among the participants were some key actors of the development of major IRC networks, including Microsoft. One of its spokespersons, Thomas Pfenning, submitted a working paper proposing a series of protocol extensions under the name "IRCX."[47] IRCUP was active from January to July 1998, but its members failed to agree even on a common agenda, and it was eventually dissolved.[48]

Microsoft reiterated its proposal in April 2004; its goal, it said, was to unify the archipelago of chat devices and IRC server code variants around a robust standard, offering a refined gradation of sociotechnical roles and adding several features to the protocol.[49] Furthermore, Microsoft wanted to make IRCX the chat protocol of its "Microsoft Exchange Server" platform, which up-to-then used a proprietary protocol, Microsoft Internet Chat (MIC). Having failed to convince IETF and the community of IRC developers, Microsoft abandoned the project and focused on a proprietary protocol, the "Messenger" protocol, which would underlie its own IM system, MSN Messenger, launched in 1999.

Despite these setbacks, other actors strived to develop new protocols from scratch, though trying to keep the IRC "look and feel" (SILC,[50] PSYC[51] among others). But none of these text conferencing protocols seems to be able to mobilize a critical mass of actors around it like IRC once did in spite of its flaws. It is a quite different story when it comes to IM protocols. Although major actors—Microsoft, Yahoo! and AOL—are still reluctant to make their proprietary protocols fully interoperable, in the free/open source community, conversely, an open protocol, Jabber/XMPP, has been

adopted as a standard by IETF. Google uses it for its IM service, Google Talk.

Two Interactional Formats, Two Models of Sociability?

This brief overview of the evolution of synchronous text-mode CMC applications and protocols led me to suggest that two distinct interactional formats have emerged as chat devices became more and more differentiated and refined. These formats are respectively underlain by two main metaphors associated with social synchrony: *conference* and *copresence*.[52] The IRC appears as the archetype of the conference format. This notion of chat involves the existence of a relatively persistent shared space—conjured up by various specific metaphors: room, channel, forum—inside which users get together and through which they are able to find other users, with whom they may weave electronic social ties that may possibly lead to offline relationships.

The other format is associated with IM systems—ego-centered messaging devices on the model of "ICQ" software and alike—but it can be found in other applications. Although they are not IM systems *per se*, Facebook and Skype's embedded chat features are shaped around this model, which is closely related to the notion of *presence awareness* and the production of a sense of *copresence*. This is why I propose to call it the "copresence" format of online chat, despite the fact that, paradoxically, the interaction might be only potential; an affordance more than a reality (see Quan-Haase & Collins, 2008). In contrasting these two types of devices, I do not mean that devices of the "copresence" format cannot be used for conferencing. Instead, my aim is to underline a *typical* pattern of social interaction correlated with them, in order to introduce an analytic distinction between two categories of chat devices, even though some devices may relate to both. Social interactions via IM systems are generally dyadic and private, and social ties exist *before* the interaction occurs. Whereas on IRC and webchats, a public interactive space forms the basis from which social ties develop and private conversations may occur, and possibly continue through an IM system more suited to that purpose. To put it simply, copresence devices are *self*-centered; conference devices are *site*-centered.

These two interactional formats associated with chatting, which emerged toward the 1980s, have been coexisting since, but there is some indication of an increasing prevalence of one (copresence) over the other (conference). On the developers' side, a disengagement from the conference format can be observed. For instance, we saw above that Microsoft had abandoned the development of a conference protocol based on IRC in favor of an IM protocol. This strategy was confirmed by its decision, in October 2006, to shut down its MSN Chat service, closing thousands of chatrooms to the great displeasure of their users. This followed Microsoft's decision, in September 2003, to close its chatrooms in Europe and Asia, officially to protect youth from sexual predators. Chatrooms stayed open in countries where their access was not free, like in the United States and Canada.[53] Geoff Sutton, then European general manager of Microsoft MSN, declared at the time that "the straightforward truth of the matter is [that] free, unmediated chat isn't safe."[54] This move was imitated by Yahoo! in June 2005, when it closed down all its user-created chatrooms, by fear of losing advertisers worried of associating their corporate image with morally offensive unmonitored channels.

Skype's technical offer constitutes another interesting case. Besides its embedded text chat service—similar to IM as I said before—Skype voice-over-IP software provides voice chatrooms. In December 2006, version 3.0 introduced "Public Chats," IRC-like user-created fora aimed at "making it easier for people to make new friends and meet others that share a common interest" (Skype, 2006). However, the service was disabled 2 years later concurrently with the launch of version 4.0 (Courtney, 2009). No official reason was given by the company, but an observer of Skype's evolution "suspect[s] that it was part of a larger debate about what role Skype had in managing spam and fear of strangers."[55]

On the users' side also, there are signs of a decline in interest for conference devices. It is not so surprising in the case of "old-fashioned" IRC: since 2004-2005, all major networks show a continuous decrease of their user base, the only exception being Freenode, the open source community network which shows an opposite trend.[56] It is, however, quite unexpected in the case of Second Life (see Hansen, 2009), not long ago considered the future of chatting, and whose decline could be related to a lack of interest in the practice of socializing with strangers through chatting.

Conversely, copresence devices benefit from a growing popularity, not only with the general public, but also with the corporate world (Boboc, 2005; Herring, 2004; Licoppe et al., 2010).[57] A recent study based on a representative sample of British Internet users aged older than 14 years showed that only 26% were socializing in chatrooms, while 56% were using IM (Gennaro & Dutton, 2007). A Canadian study tends to confirm this tendency by observing that 97% of students use IM (Quan-Haase, 2008). Some authors have put forward that different "patterns of Internet use," by which some applications are favored over others, are correlated to different sociability practices. For instance, some applications (bulletin boards, chatrooms, mutiplayer online games) tend to be associated with an extension of the personal social network, while others (email, IM, social networking sites) enable its sustainment and reinforcement (Best & Krueger, 2006; Gennaro & Dutton, 2007). What is more, chat practices in "conference" mode seem to be the

best way for Internet users to make new social ties, with a probability of 50% versus 30% with IM (Gennaro & Dutton, 2007).

One can also wonder if the copresence format does not fit, at a deeper social level, with a new mode of sociability. Contrary to the 1960s and 1970s, where Californian communitarian values formed the background social context in which early CMC devices were developed (Stone, 1991), the present times could be characterized by what Manuel Castells (2001) calls "networked individualism:"

> After the transition from the predominance of primary relationships (embodied in families and communities) to secondary relationships (embodied in associations), the new, dominant pattern seems to be built on what could be called tertiary relationships, or what Wellman calls "personalized communities", embodied in me-centered networks. It represents the privatization of sociability [. . .]. The new pattern of sociability in our societies is characterized by networked individualism. (pp. 128-129)

The same constatation has been made about patterns of interaction in the context of massively multiplayer online games:

> [World of Warcraft]'s subscribers, instead of playing with other people, rely on them as an audience [. . .], as an entertaining spectacle, and as a diffuse and easily accessible source of information and chitchat. For most, playing the game is therefore like being "alone together"—surrounded by others, but not necessarily actively interacting with them. (Ducheneaut & Yee, 2008, p. 97)[58]

Ducheneaut and Yee (2008) termed "collective solitude" this paradoxical mode of sociability, also noted by Quan-Haase and Collins (2008) in the use of IM by students:

> [. . .] they would log on IM, signalling to others that they are socially accessible, even though they knew they would not be available for communication [. . .]. This paradox is expressed in the following quote: "I'm there, but I might not want to talk to you." Students enjoy the sense of belonging IM provides them, even when they do not have time to engage in interaction. (p. 539)

This does not necessarily indicate "a possible 'loosening' of sociability" as Ducheneaut and Yee (2008) put it, but maybe a different "sense of community", more based on copresence than on interaction (Quan-Haase & Collins, 2008). It is interesting to contrast it with this analysis of chat practices on IRC:

> taking a closer look at the group's chatting, [. . .] what is clearly permanent is the presence of the social phenomenon described by Simmel [. . .] as *sociability.* This affective pleasure of chatting is the main factor that will give the motivational forces of cohesion and attraction to the virtual group's life. (Abdelnour Nocera, 2002)

Research analyzing chat practices, not just historical emergence and evolution of devices, would be necessary to support the hypothesis of a generalized preference for one interactional format of text-based synchronous CMC over the other. For instance, it would be interesting to ask chatters what applications they use today to chat, and what were the applications they used previously, so as to determine their "trajectory" of use.

Conclusion

In this article, I outlined a general history of online chat, and tried to show that a diachronic look at chat devices can uncover tendencies and disparities in the apparent continuous motion of technological innovation. I argued for the emergence of two distinct interactional formats of chat—conference and copresence, which I suggest, might serve as an analytic tool for studying present chat applications and practices. Although the tenacious persistence of the use of text-based synchronous CMC has been noted (Herring, 2004), some signs indicate that one format (copresence, that is, IM-like systems) is becoming more prevalent today, while the other (conference, i.e., public chatrooms) seems to stagnate or even decline—with a possible connection existing to a deeper social evolution. But it requires further empirical research to support this hypothesis.

Notes

1. The synchronous/asynchronous typology applied to CMC devices goes back to the early researches on communication technology (see notably Hiltz & Turoff, 1978; Kerr & Hiltz, 1982; Vallee et al., 1975; Vallee, Lipinski, & Miller, 1974). It is still widely employed today for the analysis of CMC

devices. Whereas some authors prefer to use the term *near-synchrony* instead of synchrony, the notion of synchrony should be understood as referring to a *social temporality*, or temporal structure of interaction. Vallee et al. (1975) use the more general category of "synchroneity" to characterize the temporal structure of interaction fostered by a specific feature of a computerized conference system.

2. Some authors (Beaudouin, 2002; Boboc, 2005) speak of a *temporal* copresence whereas others, drawing on Goffman's theory of interaction, prefer to speak of *interactional* copresence (Bays, 1998, 2000).

3. This article is based on a doctoral research (Latzko-Toth, 2010) that was supported by the Social Sciences and Humanities Research Council of Canada (SSHRC).

4. See Boullier and Bleuzen (1985).

5. See notably the French experience of "teleconviviality" reported and analyzed by Briole and Tyar (1987).

6. Vallee, Lipinski, and Miller (1974), in the introduction of the first volume of a seminal report titled *Group Communication Through Computers*, cite a report by Bailey, Nordlie, and Sistrunk (1963) pointing out the intensive use of teleconference via teletype by the U.S. government during the Berlin crisis of 1948.

7. "Emergency Management Information Systems And Reference Index," developed by Murray Turoff in 1971 at the Office of Emergency Preparedness to coordinate Nixon administration's wage-price freeze policy.

8. "Electronic Information Exchange System" (pronounced "eyes"), based on EMISARI and developed from 1974 to 2000 at the New Jersey Institute of Technology by Murray Turoff and Roxanne Hiltz. This system is considered as a reference and the prototype of most synchronous and asynchronous CMC platforms developed since.

9. "Planning Network," first chat application developed for ARPANET. It was created by Jacques Vallee, Roy Amara, Robert Johansen, and others at the Institute for the Future in 1973. Much simpler than FORUM—developed earlier by the same people—it was also much more limited in terms of features.

10. *On-Line System*, created by Douglas Engelbart in 1968 at Stanford University.

11. Designed in the early 1960s by Donald Bitzer at University of Illinois at Urbana-Champaign, PLATO (Programmed Logic for Automated Teaching Operations) is generally deemed to be the first computer-assisted learning system to get widely disseminated (Meer, 2003). It had a tremendous influence on many computing achievements, notably in the field of groupware and e-learning.

12. John Day, "Origin of 'talk' command", *Internet History* mailing list, 2002/12/19, http://www.postel.org/pipermail/internet-history/2002-December/000171.html.

13. It might even be lost in limbo if the recipient is not logged on.

14. For instance, see Shirky (2002).

15. See the discussion thread on the origins of the "Talk" command hold in December 2002 on the *Internet History* mailing list: http://www.postel.org/pipermail/internet-history/2002-December/000156.html.

16. The 1965 CTSS programming manual describes a feature called "inter-user communication," with this comment: "To provide the facility for users to communicate with each other directly, several routines have been added [. . .] which allow the sending and receiving of messages by way of the console input buffers. Privacy screens have been provided which 'allow' or 'forbid' the sending of messages by specified users." Thus, the "blocking" feature well-known to contemporary IM users had already been devised.

17. See FreeBSD *man pages*: http://www.freebsd.org/cgi/man.cgi; on 4.2BSD, see Salus (1995.

18. In a personal communication, M. Turoff mentioned that up to 25 simultaneous users could be supported by the program.

19. See Rheingold (2000).

20. The water cooler analogy has also been applied to IM used in an organizational setting (see Bowman, 2002).

21. See http://en.wikipedia.org/wiki/PlayNET.

22. Some prefer to call it a "backronym," that is, an acronym figured out retrospectively from a word chosen in advance.

23. "ADVENT" is in fact the name of the executable file—limited to 6 characters on the PDP-10 system—of the very first adventure game available on ARPANET, "Adventure." The same reason might probably account for the name "DUNGEN", which is the abridged version of "Dungeon."

24. "Multi-User Shared Hallucination." Probably referring to William Gibson's definition of cyberspace.

25. "Multi-User Shared Experience/Environment."

26. A remark often heard about the contemporary "game," Second Life.

27. For a detailed description of ForumNet, see Simon (1991).

28. The concept had already circulated on BITNET. Phil Howard describes it in 1985 in an email exchange concerning BITNET policy on chat (Condon, n.d.).

29. Reproduced in Condon (n.d.).

30. Relay itself did not escape the controversy around the legitimacy of chat practices in the context of resource scarcity. Less than a year later, Cornell University decided to shut down their Relay server after some BITNET user accounts had been hacked and the investigation revealed that it was for chatting on Relay. Cornell's decision was based on a note by Greg Chartrand, who aptly asked, "Is the chatting activity that has been taking place a valid activity of Bitnet? I have been told that chatting per se is not part of this network's charter. I have also been told that this is a network of Universities, and chatting is a natural healthy extension of a student's computer activities." (Greg Chartrand, cited in Chris Condon, *BITLIST*, Vol. 3, no. 8, January 8, 1986, http://nethistory.dumbentia.com/bitl32.html).

31. Like I mentioned before, "TERM-Talk" PLATO feature and the Zephyr system pertain more to instant messaging.

32. In his weekly BITNET newsletter, Chris Condon counts a few "conference machines" remaining on BITNET despite and after the rise of Relay, notably a chat system called "Forum" (Chris Condon, *BITLIST*, vol. 2, no. 10, November 1985, http://nethistory.dumbentia.com/bitl22.html).

33. The network was sometimes so saturated that some messages took up to one month to get delivered.

34. In most part (except when mentioned otherwise) information reported here comes from Jarkko Oikarinen's account, "IRC history", in an e-mail sent to Helen Rose on December 10, 1997 (reproduced in Frechette & Rose, n.d.).

35. *Remote messaging [system]*. This program is now distributed with FreeBSD (see http://www.freebsd.org/cgi/url.cgi?ports/net/rmsg/pkg-descr).

36. Mandar M. Mirashi, « A few things », 1993/05/17, message posted to *Wastelanders*, the official Undernet mailing list at the time (private archive). Also mentioned in Mirashi and Brown (2003).

37. This phenomenon mirrors a trend toward specialization of IRC channels by theme and geographic area, fostering the formation of local, multimodal communities periodically meeting up in "get-togethers" (see Latzko-Toth, 1998; Pastinelli, 2007).

38. A growing number of gamers started using IRC as a "backchannel" to swap hints, organize "LAN parties," form clans and discuss their internal affairs (see Morris, 2003).

39. Kajetan Hinner's IRC statistics website publishes the Top-100 list of most populated IRC networks, updated daily (see http://irc.netsplit.de/networks/top100.php). <SearchIRC.com> is also a good source for keeping track of IRC networks.

40. See *Business Wire*, "WebMaster Announces First IRC Server Software for Windows NT-based Intranets [. . .]", 1996/03/27, http://www.allbusiness.com/technology/software-services-applications-network-software/7215301-1.html.

41. See http://kurlander.net/DJ/Projects/ComicChat/resources.html.

42. See http://windowsitpro.com/article/articleid/16949/microsoft-chat-20-released.html.

43. The term *IRC style* would be also used in ICQ options menu, to distinguish one display mode from another, called "Talk style." This is indicative of the referential character of IRC for chat software designers.

44. This information comes from a MSN Group (http://groups.msn.com/KoachsWorkShop) created by "Koach" (one of the staff members of MSN Chat) and closed since.

45. Official Internet body in charge of the network standards.

46. IETF, "Minutes of the Internet Relay Chat Update (IRCUP) BOF", April 1997, http://www.ietf.org/proceedings/97apr/97apr-final/xrtftr30.htm.

47. The most recent version is: D. Abraham, "Extensions to the Internet Relay Chat Protocol (IRCX)," Internet Draft, Microsoft Corporation, June 1998, http://tools.ietf.org/html/draft-pfenning-irc-extensions-04.

48. I was able to access the whole mailing list archive of the working group.

49. See "Exchange Chat Features/IRCX," Microsoft Corporation, 2004/04/19, http://technet.microsoft. com/en-us/library/cc767140.aspx.

50. "Secure Internet Live Conferencing protocol," developed between 1996 and 1999 by Pekka Riikonen and released in 2000. (See http://silcnet.org).

51. "Protocol for SYnchronous Conferencing," designed by Carl von Loesch and initially released in 1995 (see http://about.psyc.eu).

52. A detour via Latin etymology reveals that the verb *conferre* has for primary meaning: "to bring in the same place", but also "to bring together, to gather," whereas the preposition *prae* signifies "before" (Gaffiot, 1934). Hence, the idea of face-to-face connoted in the word "copresence." As for *praesentia*, it means both "presence" and "present (time)."

53. See Microsoft's statement: "Protecting children online," 2005/10/05, http://www.microsoft.com/about/corporatecitizenship/citizenship/internetsafety/protectingchildren.mspx.

54. *Wired.com*, cited in Sullivan (2005).

55. Phil Wolff, managing editor of *Skype Journal* (skypejournal.com), personal communication, 2009/12/01.

56. Source: irc.netsplit.de (see n. 39).

57. Licoppe et al. point out an increase of about 30% in the number of IM users in the world between 2005 and 2009.

58. Along the same lines of thinking, Julien Rueff (personal communication) noticed that Warhammer Online users neglect the "general" (common) chat channel integrated in the game, in favor of a communication pattern centered on the "crew."

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Bio

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