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# Online discourse in a teen chatroom: New codes and new modes of coherence in a visual medium

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> We dedicate this article to the memory of Rod R. Cocking, in appreciation for all he did to make this research possible

#### Abstract

In this article, we describe how participants in an online teen chatroom adapt to the unique features of chat environments to achieve conversational coherence and create a new communicative register. Typically, online chat conversations have several topics being discussed simultaneously, and participants' contributions do not follow the turn-taking sequence found in face-to-face or telephone conversations. We propose that there are two basic requirements for coherence in a chat conversation—establishing who is participating in a particular conversation and establishing what constitutes a relevant response. Our analysis of an online chat transcript reveals that the visual nature of the chat medium allows participants to modify extant communication strategies and create new ones to fulfill these requirements. Formally, the chatroom code integrates features of oral and written discourse. Functionally, this code, in the context of a teen chatroom,

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enables participants to co-construct important features of discourse, such as participant identity and characteristics, and relevant utterances.

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#### 1. Introduction

To be coherent, conversations generally follow implicit rules. One fundamental rule is the notion of sequential relevance: Adjacent turns in a conversation should relate in some way to what has gone before (Grice, 1975; Schegloff & Sacks, 1973). Another implicit rule, which relates to what conversational analysts call the turn-taking system, concerns the succession of speakers and specifies that successive speakers in a conversation are participating in a single conversational thread (Sacks, Schegloff, & Jefferson, 1974).

Online chatrooms, a digital medium frequented by many adolescents, constitute a communication environment where these basic rules and assumptions of conversation do not hold. In this article, we demonstrate that adolescents do, nevertheless, achieve conversational coherence in online chat, and we identify the strategies they have constructed to adapt to this digital communication environment.

An important characteristic of online chatrooms is that they are inherently visual. We analyze a transcript from a teen chatroom on a popular Internet service to illustrate how users utilize and adapt to the visual nature of the medium. We demonstrate that the use of a number of visual strategies, both written and iconic, <sup>1</sup> facilitate coherent online conversations that violate many of the rules of more traditional face-to-face conversation (e.g., Herring, 1999). The strategies for achieving coherence in this environment address two important functions—identifying a conversational partner and determining a relevant response. We suggest that adapting to the demands of online chatrooms uses resources from both oral and written discourse to produce a new register for online chat. In a teen chatroom, this register serves to address the conversational needs of adolescents—identity (Greenfield, Keller, Fuligni, & Maynard, 2003), peer interaction (Berndt & Savin-Williams, 1992), self-presentation, and partner selection (Cole & Cole, 2001).

Internet relay chat, or chatrooms as we refer to them here, are virtual "spaces" in the cyberworld where people congregate for conversations and interactions. Most chatrooms require participants to register and create a screen name or nickname (often called *nicks*); it is this nickname that is visible to others when one is in a chatroom. Conversations and interactions in chatrooms take place via text that is visible to all participants (Herring, 1999). As people add lines, text continually scrolls up yielding an electronic log of the conversation

<sup>&</sup>lt;sup>1</sup> In this article, we use *iconic* in the general sense of visual image, rather than in the specific sense of Peirce, i.e., a sign that resembles its referent.

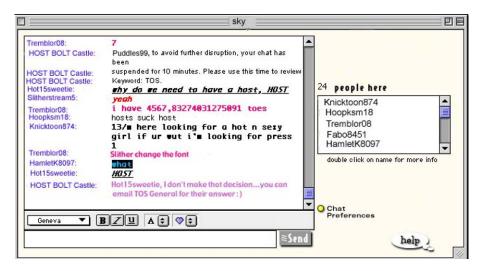


Fig. 1. Sample screen shot of dialogue in a teen chatroom. In addition to the transcript on the left side of the screen, a list of all of the screen names and the number of current participants logged in is presented in the right window of the screen. Participants may either observe or actively participate by entering into the conversation.

(see Fig. 1 for a sample conversation from an online teen chatroom).<sup>2</sup> The scrolling text in chat represents input from all active participants, which means that the single conversational space of the screen shows multiple, parallel conversations simultaneously.

Communications vary in how synchronous they are. Spoken discourse is synchronous—speakers compose, deliver, and hear messages with little time lag. Within the field of computer-mediated communication, chatroom conversations are considered a synchronous form of communication because participants communicate with others in the room by writing and reading their own and others' messages in real time (Herring, 1999). This contrasts with other electronic communication such as e-mail and bulletin boards, which are asynchronous because messages are sent sequentially and may remain unread for hours, days, or months. However, chat is considerably less synchronous than spoken discourse, because one must compose a message in writing before sending it, messages are posted sequentially although participants might type and/or send them at the same time, and the order in which messages are posted is governed by hardware constraints and server speeds (e.g., DSL versus dial-up). The usual consequence is a short lag between composition, input, and appearance on the screen. Users therefore have to find ways to adapt to the demands of such asynchronicity.

The technological, visual, and social environments of chatrooms preclude face-to-face cues such as eye contact, gaze, body orientation, and gesture that enable speakers to know when

<sup>&</sup>lt;sup>2</sup> The screen shot of a chat room in Fig. 1 is presented to give an idea of the format, but is not the printout analyzed in this article. That printout is presented in full in Fig. 2.

they have an attentive listener and listeners to know whom a speaker is addressing and what he/she is talking about (Duranti, 1997). In addition, online conversations typically have (1) several topics being discussed in parallel by partly overlapping groups of people, (2) many turns between an utterance and its response, (3) people contributing to several conversations, and (4) relatively quick topic decay—i.e., relatively short conversations on a given topic (Herring, 1999). Furthermore, because utterances appear one at a time on the screen, chat looks deceptively sequential (Crystal, 2001; Parrish, 2002; Werry, 1996). In reality, "participants compose responses to a topic simultaneously without knowing what (or even that) others are writing" (Herring, 1999).

Herring (1999) points out that this ensemble of features leads to disruptions in the normative conversational turn-taking system and sequential coherence of face-to-face conversation on both the local (two or three conversational turns) and global (topical) levels of discourse. Yet users creatively adapt to these conditions in a number of specific ways (Herring, 1999). In this article, we expand Herring's conceptualization and listing of adaptive mechanisms, by describing interactions in a teen chatroom, and illustrate how chat communications constitute a new communicative register.

# 1.1. Processes of linguistic adaptation

Language users are creative and adaptive. When situational demands change, competent language users can readily change the form of their utterances. Thus, the same individual can convey the same intention (or illocution) using different locutionary (or linguistic) forms in a classroom versus a bar. Speech adaptations that occur in response to the social and communicative features of the setting are called registers; in contrast to dialects, which vary as a function of the user, registers vary as a function of setting and use (Hudson, 1980). Online chat is a new communicative environment (e.g., written medium, anonymity of conversation partners, multiple overlapping conversations, etc.) and we may expect it to elicit adaptations in participants' language use. In our analysis of chat, we will reveal some of the ways that users adapt to the demands of online chat by creating a register that utilizes the resources of oral and written English in creative ways. This is not surprising—younger people, who tend to frequent teen chatrooms, are generally at the vanguard of cultural innovations (e.g., Greenfield, 1999), and this has certainly been the case for the computer medium more generally (Greenfield, 1984).

To be functional as a means of communication, any register needs to be coherent to its users and allow them to construct a thread of connectivity between utterances produced by a single participant and, most important in the present context, construct threads of connectivity between utterances produced by multiple conversational partners. Establishing such coherence not only links utterances, but also links speakers (Tannen, 1987).

To adapt to text-based chatrooms, participants may need to create mechanisms of coherence or modify extant ones to establish and maintain conversational coherence. The need for coherence explains *why* users might construct strategies to adapt to the unique environment of chat. Our analysis of a chat transcript will support this argument with empirical data.

## 1.2. Theoretical framework for conversational coherence in online conversations

We start by presenting a model describing how participants in an online text-based chat environment create and maintain conversational coherence. At a basic level, the requirements for coherence in a chat conversation are the following: Participants need to be able to identify the utterance to which they wish to respond and need to know when someone responds to their contribution. Analogously, respondents need to let a speaker know that they have responded to a particular utterance. Accomplishing this requires two acts that are taken for granted in face-to-face conversation: determining who your conversational partner(s) is(are) and determining whether a particular utterance is a response to your own prior contribution. In the social domain, these two acts require selection and recognition of conversational partners. In the linguistic domain, these two acts require creation and recognition of topic-relevant utterances (Grice, 1975).

The characteristic features of chat—scrolling text, a large number of interactants in a common space, multiple simultaneous conversations interpolated with each other, and overlapping participants among these simultaneous conversations—do not map well onto the usual strategies used to achieve conversational coherence in either oral or written communications. Below, we describe two assumptions made about oral and written communication that do not hold for electronic chat and that therefore create the need for new methods to establish conversational coherence.

The first assumption, from written communication, is that something that looks like a script or a transcript will contain a single conversation among all the participants. This assumption is usually violated in chat environments, especially those with a large and heterogeneous group of participants. Many participants in this context group themselves in dyads or smaller groups, with each group maintaining its own conversational thread. This forms one of the most basic principles of social organization in a chatroom and poses special challenges in identifying and responding to conversational partners. This problem is especially difficult because there are no visual cues, such as gaze between speakers and listeners, which are important for selecting and identifying the recipient or recipients of a message in a group setting (Goodwin, 1979, 1981, 2000). With multiple conversations happening at the same time and interpolated with each other, other cues to identify one's conversational partner or partners must be used to maintain coherence. There is a need for cues that identify the speaker and potential conversational partners and for cues that allow participants to select conversational partners. Using our extended transcript (Fig. 2), we will illustrate what cues are used to fulfill these functions.

The second assumption, stemming from oral conversation (as well as from screenplay or script format), is that adjacent turns are related to each other in predictable ways (Schegloff, 1979; Schegloff & Sacks, 1973). Thus, when one utterance is adjacent to the next, the second responds to and is relevant to the first. This assumption, which provides basic conversational coherence in face-to-face settings, is frequently not met in the chat environment. Here, conversational dyads and subgroups form in the space of a single screen, and multiple conversational threads are interlaced with each other. This means that conversationally

sequential or relevant utterances are usually separated in space and time. Thus, chat requires strategies for identifying relevant utterances that is, responses that follow earlier utterances in a coherent conversational thread (Sperber & Wilson, 1986/1995, 2002). We will identify some of the cues for coherence used in the multiple simultaneous conversations.

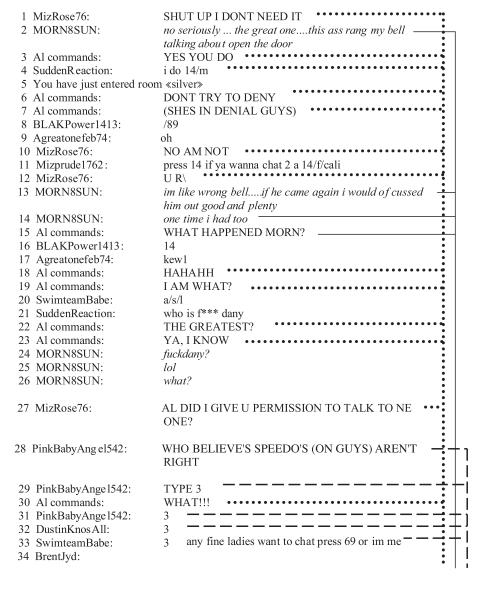


Fig. 2. Diagram of conversational threads in an extended transcript from a teen chatroom. Conversation 1 is shown in dotted lines and Conversation 2 is shown in solid lines, and Conversation 3 is shown in dashed lines. Two lines to the same line indicates ambiguity about which thread that contribution belongs to.

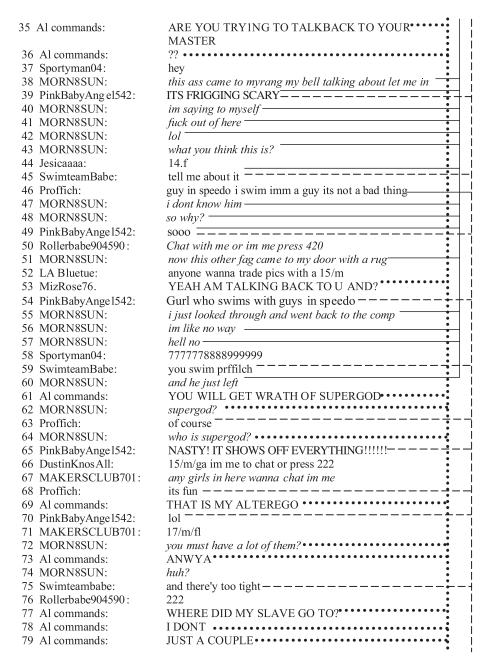


Fig. 2 (continued).

In what follows, we provide a taxonomy of cues and strategies (see Table 1 for an overview) that serve these two different kinds of functions: (1) identifying oneself and selecting and recognizing one's conversational partner or partners, which we will call the *role* 

```
80 MORN8SUN:
                al...thats not how you spell master... .....! ••••••
                save me swimteambabe -----
81 Sportyman04:
82 Al commands:
                YOU KNOW*
83 DustinKnos All:
                Roller a/s/l
                yup..even for grl's at our school....show's off everything —
84 PinkBabyAnge1542:
85 SwimteamBabe:
86 MORN8SUN:
87 Sportyman04:
88 Al commands:
                MORN, MY NAME IS SUPERMAN ******
89 PinkBabyAnge1542:
                I'm telling ya.....u don't wanna get T.H.O. in those
90 MORN8SUN:
91 Rollerbabe904590:
                CHECK MY PROFILE IF YOU DONT BELIEVE ME****
92 Al commands:
93 MORN8SUN:
94 Al commands:
95 MORN8SUN:
96 MizRose76:
                 97 MORN8SUN:
98 MORN8SUN:
                 what will happen to me? •••••••••••
99 MizRose76:
                 100 SwimteamBabe:
                 ANWAY, WHERE DID MY SLAVE RUNOFF TOO?
101 Al commands:
102 MORN8SUN:
                 103 Al commands:
104 Al commands:
105 Al commands:
                YAY
106 PinkBabyAng el542:
                awwww-----
                NOT UH ••••••
107 MizRose76.
                I wanna swim
108 PinkBabyAng el542:
                109 MizRose76:
110 Al commands:
                111 MORN8SUN:
                112 Al commands:
113 Al commands:
114 Al commands:
                115 MORN8SUN:
116 PinkBabyAng el542:
                jumps in pool::*SPLASH* -----
                117 Al commands:
118 Al commands:
                119 MORN8SUN:
                or superman
120 MORN8SUN:
121 SwimteamBabe:
                or superdude .....
122 MORN8SUN:
                123 Al commands:
124 PinkBabyAng el542:
                lo1
125 MORN8SUN:
                lol----
```

Fig. 2 (continued).

functions, and (2) creating and recognizing a relevant utterance/response to establish connectivity between utterances, which we will call the *relevance functions*. The latter involves identifying and selecting a relevant utterance from multiple simultaneous conversa-

126 HOST PACK Jessi:	Hey, SOCOOOOL9! Good to see ya!	
127 MORNSUN.	darn?	:
128 MORN8SUN: 129 Al commands:	SUPER <u>MAN</u> · · · · · · · · · · · · · · · · · · ·	
130 MORN8SUN:	you are like m frien tj	
131 SOCOOOOOL9:	Jessi! Ya already here	
132 Rollerbabe904590:	who likes french im me	•
133 BENSQUEEN1740:	who wants to chat	:
134 MORN8SUN:	super <u>BOY</u>	•
135 Al commands:	WHER IS SLAVE GIRL AT? ••••••••	:
136 MORN8SUN:	LOL	
137 HOST PACK Jessi:	Soyep	:

Fig. 2 (continued).

tions and responding to it. One must also be able to create a response that will be recognized as relevant by one's addressee, despite a panoply of multiple conversations.

Together, these functions establish conversational coherence. Many strategies in chat are the same as those used in ordinary face-to-face conversation. In some cases, these strategies are adapted directly from face-to-face oral conversation into this new written environment, for example, use of a name (vocative) in conversation to affirm to whom one is talking. In other cases, strategies from face-to-face or oral communication are used in new ways, for example, repetition (Ochs Keenan, 1977; Tannen, 1987). Finally, some strategies are novel and capitalize on the visual and iconic nature of the chat medium.

Table 1
Taxonomy of strategies used by online chat participants to establish and maintain conversational coherence

	Coherence functions			
		Role		
	Own identity	Addressee identity		
Conversational strategies				
Repetition		X	X	
Vocative		X		
Chat: visual cues				
Nickname format	X	X		
Distinctive script	X	X		
Visual record		X	X	
Chat: conventionalized codes				
Numerals		X	X	
Standard graphic format	X	X		
Slot-filler code	X	X	X	

# 1.3. Chat—An amalgam of spoken and written language

There are many dimensions by which one can describe spoken, written, and chat registers. A consideration of some of these will help point out relevant features of chat that distinguish it from other communication media. We will begin by examining the linguistic properties of chat to see how it compares with spoken and written language.

One dimension that distinguishes written from spoken language is explicitness—written language is more explicit, whereas spoken language is more implicit because it uses both verbal and nonverbal contexts to complete its messages (Greenfield, 1972). A second dimension is completeness—written language tends to use complete sentences whereas oral language tends to use incomplete sentences (Greenfield, 1972). A third dimension is complexity—written language tends to have a more complex syntactic structure than spoken language (the contrast being most pronounced in the case of spontaneous, unplanned conversation) (Chafe, 1982; Ochs, 1979; O'Donnell, 1974; Tannen, 1982). Written language tends to use longer sentences, whereas spoken language, because of processing limitations, tends to use shorter sentences. Finally, the vocabulary and grammar of written language are more conventional and formal than those of spoken language that, in turn, is more likely to include colloquial speech, slang, and idioms.

Chat conversations exhibit features of both written and spoken language (Freiermuth, 2002). Chat takes place in the written medium (typing words on a keyboard and reading words on a screen), but like spoken language, particularly unplanned speech, generally consists of shorter, incomplete, grammatically simple, and often incorrect (grammar and typographical errors) sentences (Herring, 1996). Crystal (2001) reports that 80% of the utterances in published log data were five words or fewer in length. Others have found that chat users omit copulas, subject pronouns, and articles (Ferrara, Brunner, & Whittemore, 1991). There is disagreement over whether the language found on the Internet (called Netspeak) is a hybrid speech/writing register or is a "genuine third medium" (Crystal, 2001, pp. 48). We believe that chat is more of a register of written language with many of the stylistic features of spoken language. While learning to write in school can push oral discourse in the direction of written language characteristics (Greenfield, 1972), chat presents the opposite case: Its spontaneous conversational context and somewhat evanescent nature (the fact that earlier utterances eventually scroll out of sight) present conditions that push this written medium in the direction of oral language characteristics.

One example of how the written medium is influenced by features of oral communication is brevity on the part of each speaker. This is a predominant feature of the chat environment, where conditions force it on conversational interactants because of the slower speed of typing relative to talking. Brevity enables the real-time production of utterances to approach their timing in oral discourse. In other words, the electronic writing environment adapts to fulfill the function of real-time conversation.

The term *chat* encapsulates the notion of real-time conversation. Like other communication technologies, such as the telephone, fax, and, importantly, e-mail (Baron, 1998),

chat appears somewhere on the continuum from written to spoken language. Technologies that lack the face-to-face qualities of conversation adapt more of the explicitness of written language. For example, telephone conversation and radio communications are more explicit, using words and sentences to make up for the lack of gestures, eye gaze, and visible referents (Greenfield, 1984). Similarly, fax and e-mail depart from other classic forms of writing by adapting the more succinct features of oral communication, probably as an adaptation to the speed of reception, which ensures that much context concerning the message is already known (versus a letter, which takes much longer to arrive). To illustrate, the first e-mail message from an unknown person is often more letter-like, with longer complex sentences, longer overall length, and formal openings and closings; subsequent e-mails from the same person tend to be briefer, shorter, and more informal.

# 2. Methodology

## 2.1. Why teen chat?

Young people today are the most native speakers of the codes of the Internet, creating the language and the codes as they go along. Chatrooms are popular with teenagers, and according to one recent survey, at least 71% participate in them (Kaiser Family Foundation, 2001). This high frequency of use is recent—only a few years ago teenagers rarely entered them (Roberts, Foehr, Rideout, & Brodie, 1999; Subrahmanyam, Kraut, Greenfield, & Gross, 2001). Our use of a teen chatroom allows us to examine the vanguard of Internet codes, enabling us to study how the new language of the Internet is being constructed by young members of a language community.

## 2.2. Electronic ethnography

In the tradition of ethnographic methodology (Duranti, 1997), one of us (Greenfield) acted as a participant observer in a teen chatroom. Here she had an opportunity to "observe by being in the middle of things" (Duranti, 1997 p. 89). Like the other participants, she gained access to this chatroom through an account with an Internet provider. This provider recommends parents create a master account with different screen (or nick) names for each user, and then assign to a child's screen name the level of access they deem appropriate. For instance, a user with an under-13 designation cannot enter a teen chatroom. This service also has a monitor participating in each chatroom; the monitor intervenes and can remove access if a participant breaks the service's rules of conduct. A chatroom is like a metaphorical room in the sense that a given person is either "in" or "out," and one can enter or leave the room with relative ease. Also, like any room in physical space, one has a choice between talking or observing. One can also symbolically view who else is in the room (see the list on the right side of Fig. 1).

Greenfield mainly took the role of observer in the chatroom. However, there were occasions where she acted as a participant; this occurred only when another person in the same room sent her a private instant message. At this point, her replies were always brief and she quickly terminated the interaction. At the end of the session, she printed out the log, which is shown in Fig. 2 in its entirety. In this article, we analyze this lengthy, spontaneously produced verbal exchange that occurred in the chatroom while Greenfield was there. While we analyze local conversational elements—specifically, cues and strategies for selecting partners and identifying a relevant response—we also situate these elements in the context of global discourse patterns.

Because we were working from the transcript of anonymous participants, we were limited in the extent to which we could obtain local interpretations of the interactions. However, it is worth noting that, although we were limited to the chatroom transcript itself to figure out our participants' perspectives, so were the participants themselves. One of the characteristics of our electronic field site is that participants are generally anonymous and disembodied to each other. In most cases, participants know each other only by screen name and cannot "place" each other geographically or by name. Because of these constraints, our electronic "field site" is very different from the traditional ethnographic field site, and, correspondingly, our methodology had to be adapted to these new circumstances. For example, any attempt to interview a chat participant would also involve a departure from the naturally occurring anonymity of chatrooms.

We obtained permission to conduct this study from the University of California-Los Angeles (UCLA) and California State University-Los Angeles (CalState LA) Institutional Review Boards on the understanding that we were observing anonymous public behavior. Because of the difficulties involved in obtaining informed consent from chat participants and their parents, we were permitted to conduct this study without informed consent forms on the condition that we would not contact our subjects and they would remain anonymous. Although we were unable to obtain the individual interpretations by the participants of our printout, we analyzed it in collaboration with an expert chatter (early 20s), who helped us diagram the conversational threads in Fig. 2. In addition, the second author had spent considerable time over a period of 8 months conversing in adult chatrooms and was able to build on the expert chatter's attempt to diagram the conversation.

Our data are in the form of a transcript of the conversation. It is important to note, however, that this is not a transcript in the usual sense; instead, the transcript is the conversation. That is, the transcript has been created by the coparticipants, not by the researchers. Contrary to the implications of the prefix trans-, the record has not crossed from one medium to another. The coparticipants type in their contributions; the researchers simply print it out. For this reason, it is probably more accurate to call this record a printout rather than a transcript. The conversation seen in Fig. 2 was printed out from the computer at the time it took place with the italicization, capitalization, punctuation, and the spelling that you see (although the original typed conversation was in four colors, black, blue, red, and pink). For purposes of this article, we have transformed the printout into the record seen in Fig. 2. To the original record, we have

added line numbers and brackets to track conversational threads. Prior to inserting line numbers, the printout was imported into Microsoft Word, which did not have all the fonts of the original. We therefore used the closest font available to represent the chatroom printout. The only substantive change in Fig. 2 from the original printout is the screen names. In accord with the directive from the UCLA and CalState LA Institutional Review Boards, we have changed screen names to protect participant anonymity. We have, however, created screen pseudonyms to preserve the flavor and connotations of the original screen names.

Fig. 2 presents the entire chat session printout. It reveals the overall structure of conversation in a chatroom and the coherence that transpires, despite highly unfavorable conditions. In discussing elements of the chat conversation, we will insert lines from the printout into the body of the article. These examples will be given numbers in parenthesis, e.g., (1). Examples will also retain their line numbers so that they can be placed in the context of the total conversation shown in Fig. 2. Note that sometimes a contribution takes more than one line; this happens when the person hits enter before finishing the contribution. Dotted, solid, and dashed lines indicate the three main conversational threads going on in the room.

## 3. Analysis

The main goal of our analysis was to delineate examples of strategies used to increase conversational coherence. We start by describing the main conversations occurring in the chatroom; then we describe the strategies that help chat users to approximate the speed of oral conversation, and finally present a taxonomy of strategies used by participants to achieve coherence.

#### 3.1. Conversational threads in a teen chatroom

The term *conversational threads* refer to the different, but parallel conversations taking place simultaneously in the same digital space. In conventional face-to-face conversations, the conversational thread can easily be identified by simply following the turn-taking that occurs between participants. However, in most chatrooms, there are usually a number of participants in the conversation and their contributions do not necessarily follow in any logical sequential order as there are time lags based on system and server speeds. More important, because different subgroups of participants are simultaneously engaging in different conversations, different conversational threads are interpolated with each other. The Netspeak term *thread* is an apt metaphor for the way one must follow a conversation's twists and turns through other distinct conversations. Furthermore, each person can simultaneously participate in more than one conversational thread.

In many ways, chat resembles the complexity inherent in a cocktail party with multiple conversations in a small space, although the complexity of chat is greater than the multiple discrete conversations at a cocktail party. As in a cocktail party, one can "eavesdrop" (in chat, visually, not aurally), and should avoid being distracted by conversations in which one is not involved. However, unlike a cocktail party, one can also participate simultaneously in more than one thread.

Our analysis of a sample session, based on an expert chatter's charting of the conversational threads and our own study of the printout, suggests that there are three main conversations with partially overlapping participants. Conversation 1 (Fig. 2) is between MizRose76 and Al commands, with SuddenReaction coming in at one point and MORN8SUN joining in for an extended period at a later point. Conversation 2 (Fig. 2) is between MORN8SUN and Al commands, with a couple of ambiguous contributions from PinkBabyAngel542; however this conversation appears to decay when MORN8SUN enters the conversation between MizRose76 and Al commands. Conversation 3 (Fig. 2) takes place between PinkBabyAngel542, DustinKnosAll, SwimteamBabe, and Proffich.

As our analysis will make clear, it is important to note that some parts of the conversations are more ambiguous than others, and the coherence is less than perfect. For example, some utterances could be part of either of two conversations—for example, in line 39, where PinkBabyAngel's "IT'S FRIGGIN SCARY" could be part of Conversation 2 or 3 (Fig. 2).

#### 3.1.1. Conversation 1

The beginning of the printout (lines 1 and 2) comes in the middle of two ongoing threads. Nonetheless, one can see that lines 3, 6, and 7, by Al commands, are a response to line 1 from MizRose76. MizRose76 then opposes Al commands in lines 10 and 12. Al commands dismisses her position in lines 18, 19, 22, and 23, transforming her assertion that he is in denial (line 12) into an assertion that he is "the greatest" (line 22). The continuity of MizRose76 and Al commands as participants certainly helps in maintaining coherence.

Adding to the complexity, line 27 from MizRose76 ("AL DID I GIVE U PERMISSION TO TALK TO NE ONE?") tells Al commands not to get into Conversation 2, described below! (He had entered that conversation in line 15.). Al commands replies to MizRose' admonishment in lines 30, 35, and 36 and the conversation continues.

## 3.1.2. Conversation 2

In our printout, this thread also starts in the middle, at line 2 and is shown in dotted lines in Fig. 2. The connection between lines 2, 13, and 14 is provided by the narrative quality of MORN8SUN's story of someone coming to her door. The multiple turns between lines 2 and 13 illustrate how other conversations can be interpolated even within one speaker's "turn." Clearly, the term *turn* has a more abstract meaning than in face-to-face conversation. Here, calling lines 2 and 13 a single turn refers to the absence of intervening contributions to the participant's thread from other participants in the thread, as there are intervening turns from other conversational threads. Al commands enters the conversational thread at line 15, responding to lines 13 and 14 from MORN8SUN; note the particularly large gap between

lines 15 and 38. In line 38, MORN8SUN complies with his request to continue her narrative. However, Conversation 2 seems to end after MORN8SUN joins conversation 1 in lines 62 and 64.

#### 3.1.3. Conversation 3

This thread is begun when PinkBabyAngel542 attempts to start a conversation in lines 28 and 29; the responses occur in lines 31 (PinkBabyAngel542 answers herself), 32 (Dustin-KnosAll), and 33 (SwimteamBabe). PinkBabyAngel542 replies in line 39, and Swimteam-Babe contributes in line 45. The topic of this conversation is the merits and demerits of guys wearing Speedo swimsuits and is shown in dashed lines in Fig. 2.

## 3.1.4. Ambiguous contributions

Not all parts of every thread are clear-cut. For example, it is not entirely clear whether PinkBabyAngel542, in lines 39 and 49, has continued in Conversational Thread 3 or is now participating in Conversation 2 (the ambiguity is indicated on the printout by both solid and dashed lines). PinkBabyAngel's repetition of MORN8SUN's "so why?" (line 48) with a response of "sooo" (line 49) may be a cue to a switch in conversational thread.

While Proffich clearly responds to SwimteamBabe's "Tell me about it" in line 45, with line 46 (Conversation 3), it seems possible that SwimteamBabe's line 45 is actually a response to MORN8SUN's line 43 ("what you think this is?") (Conversation 2) and stimulates MORN8SUN to continue in line 47 ("i dont know him.") In other words, Proffich and MORN8SUN may have each interpreted SwimteamBabe's line 45 as a part of a different conversation. Here the ambiguity seems to arise from the possibility that a participant is switching from one thread to another. (In line 39 and 49, is PinkBabyAngel staying in Conversation 3 or switching to Conversation 2? In line 45, is SwimteamBabe remaining in Conversation 3 or switching to Conversation 2? Again, ambiguous contributions are shown with two kinds of lines, corresponding to the two possible threads in which they could participate.)

Note how in Fig. 2, the conversations are not separated in time or, unlike a cocktail party, even segregated in space. They are spatially and temporally intercalated with each other. Adding to the complexity (and similar to a cocktail party), at least some participants are monitoring other conversations, and, unlike a cocktail party, can participate in multiple conversations.

## 3.2. Strategies that make chat approximate the speed of oral conversation

Conversation 1, like the other parts of the printout, confirms the presence of shorter, incomplete, grammatically simple, and often incorrect (grammar and typographical errors) sentences found in prior research on chat (Crystal, 2001; Werry, 1996). Clearly, not stopping to correct errors increases the speed of communication.

Participants adopt other strategies to increase the speed of an individual written utterance. For example, the speed of each conversational turn is increased by omitting

periods and other punctuation. Pressing "enter" is the default full stop in the chat register. Another technique that increases speed is the absence of changes of case, from upper to lower or back again. In our transcript, most of the participants communicate either all in uppercase (e.g., MizRose76, starting in line 1) or all lowercase letters (e.g., SuddenReaction, starting in line 4). Abbreviations, mostly unique to online chat, are another important feature of written language that constitute a chat-specific adaptation resulting in increased utterance speed (e.g., Fig. 2, line 25, "lol" for "laughing out loud").

## 3.3. Strategies for coherence

Our analysis suggests that in their quest for conversational coherence, participants use strategies adapted from face-to-face conversations and construct strategies specific to chat environments. Table 1 presents these different strategies organized by whether they are adapted from face-to-face conversation or are unique to chat environments. The latter group includes two subcategories: visual cues and conventionalized codes. For each strategy, we will also show how these strategies are used by interactants in chat conversations for *role* (establishing own identity or selecting one's conversation partners/addressee) or *relevance* functions. Together, these cues and codes contribute to *coherence* within (but not across) the various conversational threads.

## 3.3.1. Strategies adapted from face-to-face conversations

3.3.1.1. Repetition. One cue adapted from face-to-face conversation is repetition, which is used extensively in face-to-face encounters to establish coherence (Tannen, 1987). Repetition is also frequently used by chat participants to identify relevant utterances and is illustrated below in Example 1 from Conversation 1.

- (1)
  - 35 Al commands: ARE YOU TRYING TO TALKBACK TO YOUR MASTER
  - 53 MizRose76: YEAH AM TALKING BACK TO U AND?
  - 61 Al commands: YOU WILL GET WRATH OF SUPERGOD

(Gaps in line numbers indicate intervening contributions that are not part of the conversational thread in question; these intervening turns can be seen in detail in Fig. 2.) We suggest that MizRose76's use of the words "AM TALKING BACK TO U" in line 53 signals to Al commands that it is a relevant response to his earlier utterance in line 35. Al commands' response in line 61 makes it clear that he has understood line 53 as a response to his initiation in line 35. Although we present repetition as one possible cue, it is usually used in conjunction with other cues and we will point out the use of repetition when describing those cues.

Repetition is used at other points in Conversation 1 to create relevance. For example, line 3 ("YES YOU DO") uses repetition of the "do" form of the verb to relate to line 1;

SuddenReaction also enters the conversation with a sole comment in line 4 ("i do 14/m"), also using repetition of "do" to signal relevance.

Another example of repetition occurs in Example 2, where PinkBabyAngel542 simultaneously creates relevance and attempts to identify potential conversational partners through a request for repetition (line 29), which is complied with in lines 31, 32, and 33.

(2) 28 PinkBabyAngel542: WHO BELIEVE'S SPEEDO'S (ON GUYS) AREN'T RIGHT

29 PinkBabyAngel542: TYPE 3

31 PinkBabyAngel542: 3

32 DustinKnosAll: 3

33 SwimteamBabe:3

This mode of recipient design is a very special adaptation to this medium and one that occurs often. Here PinkBabyAngel is merely trying to figure out who, among the group assembled in the chatroom, agrees with her and therefore might be compatible. Other members of the group must decide if they fit the desired category. This is a very common strategy and seems to be an adaptation to the disembodied nature of the social group.

3.3.1.2. Vocative cues. Another way is to select one's partner by using the vocative cue from conventional face-to-face conversation (Werry, 1996, refers to the practice of including the name of an intended addressee in a turn as addressivity). This is an example of importing a conversational strategy from oral discourse into this written medium. However, the nonsequentiality of chat makes the selection different from what conversational analysts describe for more traditional conversational media. In conversational analysis, the turn-taking system has a turn-allocation component that specifies how the next speaker is chosen (Sacks, Schegloff, & Jefferson, 1974; Duranti, 1997). One mode of turn allocation is other-selection (current speaker selects next speaker). This is what the vocative does in chat. However, there is a difference. One is not necessarily selecting the next speaker in the chatroom. Instead, one is selecting the next speaker in a particular conversational thread; this person may or (more likely) may not be the next speaker.

Often participants clarify whom they are addressing, with whom they are initiating a conversation, or to whom they are responding by prefacing their contribution with the name of the addressee; one sees this in the following examples. In Example 3, MizRose76 signals that her intended addressee is Al commands by prefacing her utterance with "Al."

(3) 27 MizRose76: AL DID I GIVE YOU PERMISSION TO TALK TO NE ONE?

Other examples of the vocative occurs in Example 4, where MORN8SUN also prefacing her utterance with "AL," and in Example 5, when Al commands starts his utterance with "MORN."

- (4)
  80 MORN8SUN: al...thats not how you spell master.....!
  - 88 Al commands: MORN, MY NAME IS SUPERMAN

On other occasions, one sees a modified vocative form where the name is affixed to the end of the statement as in line 119, when MORN8SUN writes "yeah you al." A particularly interesting instance, where a name is affixed, occurs in Example 6, line 15, when AL commands writes

(6)
15 Al commands: WHAT HAPPENED MORN?

Here Al commands has been responding to MizRose76 up to this point; so the use of Morn's name makes it clear that he/she is switching conversational partners. This example suggests that the vocative cue is more likely to be used under some conditions rather than others—for instance, when there might be increased ambiguity as to the identity of the addressee.

The use of names also occurs when a participant greets a friend who just enters the room, as in Example 7.

(7)
126 HOST PACK Jessi: Hey, SOCOOOOL9! Good to see ya!

The online greeting is similar to how one might greet a friend in a face-to-face encounter. The response for line 126 occurs in Example 8, below:

- (8) 131 SOCOOOOL9: *Jessi! Ya* already here
- 3.3.2. Strategies constructed for chat environments
- 3.3.2.1. Visual cues. Among the strategies constructed for chat environments are various visual cues that play crucial role functions and help participants to establish their own identity and to select and identify their conversation partners. These visual cues or strategies capitalize on the visual nature of the online medium and are thus unique to chatrooms.

*Nickname format.* The most basic visual cue is the distinctively visual format of the nicknames (or "nicks"), which usually are a mixture of lower- and uppercase letters, numbers, and are frequently something catchy. Examples include MizRose7, MORN8SUN, and HOST PACK Jessi. Nicknames allow users to present only those aspects of their identity that they wish to reveal, such as their gender.

Information about identity is relevant to role functions as in drawing the attention of a potential conversation partner (e.g., males looking to converse with females, look for female-sounding nicknames) and vice versa. Notice, for example, how some of the girls' names have a kind of sexualized and seductive quality; names like PinkBabyAngel could even be considered to be "hypergender" signals (F. Steen, personal communication, 2002).

Nicknames continue to be important even after a partner has been selected as they stand out visually in the conversation thread (they stand out even in this document) and help participants keep track of what their conversation partners are saying. Here we see that the uniquely visual format of nicknames helps in drawing the attention of potential partners and intended addressees and subsequently helps participants follow the thread of a particular conversation, once they have an idea of who is participating.

Distinctive script. Another visual strategy is the use of a distinctive script by many of the participants. For instance, MizRose76 and Al commands use all capital letters to talk, while MORN8SUN uses lowercase italics. Colors (not visible in our black-and-white printout) further differentiate the participants. In the original printout, different participants use different colors for their contributions. For example, MizRose76 always writes in red, PinkBabyAngel52 always writes in pink, SwimTeamBabe writes in purple. Each of these colors is unique on the screen and makes identification of the writer easier for the other participants.

Importantly, an individual does not usually change either fonts or colors midway through a conversation. There is an implicit attempt to maintain continuity of identity in a situation where the usual markers of personal continuity, such as face, physical body, and voice, are absent. Such continuity is important for the role functions of identifying and selecting partners; it also helps participants know to look for the particular kind of text format being used by their conversation partners. Of course, others not participating in their conversation sometimes use the same format, and so presumably they have to ignore their contributions. There are fewer distinctive visual styles than there are participants in the chatroom; but, by reducing the possibilities, these styles still aid in the role functions of keeping track of identities and conversations.

Visual record of the conversation. A third visual strategy that users capitalize on is the visual record of the ongoing conversation. Participants can scroll up or scroll down the record on the screen when they do not understand the conversational thread or if they enter the room in the middle of a conversation and need to find out what the participants are talking about (Werry, 1996). The format of the visually distinctive nicknames and the particular fonts or colors used by participants not only aids in identifying and selecting partners; it also helps participants to keep track of the conversation and to more easily identify a relevant utterance. Clearly, knowing who has been in the conversation is a cue to potential relevance.

3.3.2.2. Conventionalized chat codes. Another group of strategies are a group of conventions or chat codes that have been constructed (and co-constructed) as specific adaptations to the chat situation.

Request for numerals. One code that is used for the role function of finding a conversational partner and initiating a conversation is the request for visually distinctive numerals, as in Example 9. Such strategies are necessary in order for users to select a conversational partner. Example 9 presents an offer (line 11) and an almost immediate acceptance from BLAKPower1413 (line 16). Presumably, the two then go to a private chatroom to converse with each other.

(9)11 Mizprude1762: press 14 if ya wanna chat 2 a 14/f/cali16 BLAKPower1413: 14

This is but one example where the use of numerals helps participants with the role function of selecting and identifying a respondent by requesting a sort of visual "badge." Note that the relevance function is achieved by repeating the requested numerals, so one can also see that the strategy of repetition is an intrinsic part of this chat-specific visual code.

Using a request for numerals as a way of selecting and identifying a conversational partner is illustrated yet again in Example 10:

(10)66 DustinKnosAll: 15/m/ga im me to chat or press 22276 Rollerbabe904590: 222

Such codes not only help the initiator to select a conversational partner, but also help participants to respond to a potential conversation partner with a relevant utterance. In Example 9, line 11 expresses Mizprude1762's desire to converse with another user and the "14" in line 16 establishes BLAKPower1413's desire to chat with Mizprude1762. The same analysis holds for Example 10.

Another example of requesting numerals to select and identify a conversational partner is seen in Example 11:

(11) 50 Rollerbabe904590: *Chat with me or im me press 420* (im is an abbreviation for instant message.)

While Rollerbabe does not receive a response, it is not clear from our printout whether she was successful in establishing a conversation or not because participants could have been instant messaging (im) each other privately. As many interactants drop out of the public chat space and move on to private conversations, we often cannot say for sure whether they are successful in striking up a private conversation with another participant, whether they are not

successful and are still lurking, or whether they are unsuccessful and just moved on to another room.

Numerals that stand out visually are useful to establish relevance, as well as to select a conversational participant, as the examples described earlier, illustrate. The requester can look for the requested numerals, and when they appear, he/she can recognize it as a relevant response ("14" in Example 9 and "222" in Example 10). The requested number both stands out visually and is clearly the relevant response.

In terms of relevance and connectivity, these examples also reiterate our earlier point about repetition—in these two examples, the numerals 14 and 222 are consciously repeated and serve as the linking cue. Repetition is not merely a conversational response; it is actively sought by the initiator of such interchanges. It is not repetition per se, but this purposeful request for repetition that is unique to chat and helps overcome its specific obstacles to coherence. Note that repetition is sought not just to link utterances, but also to link participants, and to draw them into a social exchange, as we saw earlier.

What is visually distinctive in these examples is the use of numbers amidst letters ensuring that the message stands out. The use of standard or conventionalized formats ensures that other users immediately understand the message and know how to respond, and the use of numbers makes it easy and quick to respond. Again, we see how users adapt to the temporal constraints and lack of face-to-face cues in chat environments by creating strategies that capitalize on the visual cues that are available and are rapid in a text-based environment. Using these strategies, participants are successful in identifying and selecting their conversational partners, the first step toward establishing and maintaining conversational coherence.

The use of visual imagery is not unique to chat conversations but is part of a larger trend involving the increased use of iconic modes of representation over written modes of representation for communication on the Internet (Kress, 1998) and with computers more generally (Greenfield, 1998; Greenfield, Camaioni, et al., 1994; Greenfield, deWinstanley, Kilpatrick, & Kaye, 1994). Importantly, visual imagery is not only incorporated into the conversation, it is also influencing the mode of written discourse that is used.

Standard graphic formats. Another chat code is the use of standard formats to initiate a conversation. Participants will frequently state their age, gender, and location in a set format so as to announce their presence in the room. In the following three examples, the numbers 14 and 17 are ages in years, f stands for female, and fl stands for the state of Florida. In other words, standard graphic formats incorporate abbreviations, mentioned earlier as an element in the chat register.

```
(12)
4 SuddenReaction: i do 14/m
(13)
44 Jesicaaaa: 14.f
(14)
71 MAKERSCLUB701: 17/m/fl
```

These codes allow users to obtain information about the identity of a potential conversation partner, information that is readily available in face-to-face settings. Certainly, it is not a coincidence that age and sex are the most universal markers of social roles.

Thus, identification and selection functions often go together. For instance, in Example 9, Mizprude1762 in line 11 writes "press 14 if ya wanna chat 2 a 14/f/cali." Not only is she requesting numerals to identify a potential conversational partner, but she is also using the age/sex/location format to provide crucial identity information about herself.

Slot-filler codes. A variant of this type of code is the conversation opener, a/s/l (age/sex/location), which occurs in Examples 15 and 16. It represents the same graphic code, created for the chat environment, but in a slot-filler format. It is intended as the initiation element in an initiation—response pair, with the expected response to fill in the blanks regarding the participant's own characteristics, using the graphic format discussed above. This initiation—response pair is reminiscent of highly conventionalized adjacency pairs, such as greeting exchanges, in conversational analysis (Duranti, 1997; Schegloff & Sacks, 1973). We could think of it as a new type of adjacency pair created for this communicative environment—except that the two pair parts are rarely adjacent.

(15) 20 SwimteamBabe: a/s/l

(16) 100 SwimteamBabe: a/s/l

A well-used chat convention is that a/s/l stands for age, sex, and location. As noted above, it is often the first thing that participants spontaneously provide to the other chat participants. In this section, we see that it is also one of the first things they request of each other when meeting online for the first time. Note that a/s/l has the requisite brevity necessary to maintain the timing of oral conversation, but it uses abbreviations, a convention from the written medium. (Such initiations are not always successful, at least within the confines of our transcript, as in SwimteamBabe's initiations above.)

The distinctive visual appearance of the symbols again ensures that they stand out in the conversation. It is the opportunity for participants to present themselves and their identity to others and helps with selecting and identifying potential conversation partners. This is another example of how users have constructed a code to compensate for the anonymous nature of the medium—and helps them to quickly detect information that would otherwise be readily available in a face-to-face setting.

At the same time, the slots in the a/s/l/ initiation incorporate knowledge of what the format and class of relevant responses are thus providing a very strong cue to relevance. For example, in Examples 15 and 16, SwimteamBabe would recognize a relevant response as one having the pattern—age/m or f (for male or female)/state. The slot-filler format is also a connecting cue not unrelated to repetition. Each category term—age, sex, and location—is "repeated" in the reply, but with a specific exemplar of the general category.

The common thread through these examples is the use of a conventionalized format involving numerals and abbreviations within the chat environment. This format makes it easy for other users to create a relevant response and easy for the initiator to recognize the response as relevant.

#### 4. Discussion

We have studied emergent conventions for constructing conversation in an online chatroom for teens. Chatrooms provide an interesting medium because they consist of multiple written conversations occurring at the same time. Because all conversations are sharing the same space, they become temporally distributed. Cues to coherence such as adjacent turns—available in conventional face-to-face or telephone conversations—are generally absent. We asked how participants are able to establish and maintain conversational coherence in the absence of cues, such as adjacent turns, and in the presence of multiple conversational threads among different subgroups of participants and how they solve central conversational functions, such as identifying the conversational partner and responses relevant to one's own utterances.

Our analysis suggests that chat participants are adapting to the online chat environment by using available cues and creating new strategies to recognize and select conversational partners (role functions) and to recognize and create relevant responses (relevance functions). The strategies that are used include ones familiar to us from face-to-face conversation—such as repetition and addressing intended conversational partners by name. Chat strategies also include unfamiliar ones created for the computer medium—such as requesting that potential addressees type in a particular set of numerals if they want to talk to a particular person or on a particular subject. Strategies also include creative amalgams, such as the slot-filler code. Although constructed in written form, the slot-filler code has the functional properties of adjacency pairs from oral conversation (Schegloff & Sacks, 1973), but without the formal property of adjacency.

Our analytic strategy was to identify those cues that provided coherence for us as interpreters. Like conversational analysts, we did not take for granted exactly what the participants had in mind. Instead, we have drawn out the cues that we, the researchers, used to establish coherence and to diagram conversational threads, taking care to distinguish clear-cut from more ambiguous instances of coherence.

In further study, it would be interesting to see how interactants interpret a printout in which they had participated and how they identify the cues they themselves had used in the conversation. At this first stage of research, we have relied on our own analysis, aided by our expert chatter. In addition to specific cues, there are also general judgments of topical relevance, semantic relationship to a prior turn, and knowledge of who is participating in a particular thread at a particular time that must come into play, both for us and for the participants. These more general strategies, relevant in any conversation, were not the focus of this article. Rather, we identified novel strategies that seem to have been adapted or created for this particular communication genre.

The visual nature of the online computer medium helps participants to overcome the confusion of multiple overlapping conversations, changing participants, and spatially and temporally separated conversation threads. Key strategies—such as nickname format, use of numerals, distinctive script, standard graphic format, and slot-filler framework—capitalize on the visual nature of the medium. Just as participants can use auditory input at a cocktail party to overcome the confusion of multiple conversations taking place at the same time, but distributed in space, participants in an online chatroom use visual input to help overcome the confusion of multiple conversations taking place in the same space, but distributed in time.

We suggest that the emerging language of chat can be thought of as a register created by language users to adapt to the communicative and social demands of this digital environment. Chat is incoherent only if one does not know the codified register. Some mechanisms used by participants to achieve coherence derive from oral communication, while others are inherently visual and derive from written communication. Together, these strategies constitute creative adaptations to achieve conversational coherence in the chat environment. They also allow participants to create brief utterances (Cherny, 1999; Davis & Brewer, 1997). In sum, it is through the creation of a codified register that chat participants have been able to achieve coherence in this new digital environment.

We submit that the first "native speakers" of the chat register are children and adolescents. Indeed, if creating a chat register follows the pattern of creating other novel registers, such as Nicaraguan sign language (Senghas, in press), adolescents could be particularly critical to its evolution. Because new technology has created a drastically altered communication environment, chat gives us an opportunity to see language evolution in unusually rapid action. The chat register continues to be under construction by users themselves, as they adapt to a unique environment that is a product of recent technological evolution.

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