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AUTHOR Altun, Arif
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ABSTRACT

Internet Relay Chat (IRC) is an electronic medium that combines orthographic form with real time, synchronous transmission in an unregulated global multi-user environment. The orthographic letters mediate the interaction in that users can only access the IRC session through reading and writing; they have no access to any visual representations at all. In addition to all the characteristics that IRC has, the 3-D virtual environment supports users with three-dimensional graphics that represent an individual through the use of an avatar in a virtual environment. This research examines the extent to which 3-D virtual chat differs from text-only IRC chat, and proposes an explanatory framework for 3-D chat for interaction management. The interaction management strategies found in the data have been categorized under a single general heading: opening phase and invitation. These phases are discussed in terms of their similarities and differences to IRC; the functions they appear to serve are discussed in terms of two subheadings: interpersonal goals, and level of experience and acquaintance. (AEF)

Interaction Management Strategies on IRC and Virtual Chat Rooms

By:

Arif Altun

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Arif Altun
University of Cincinnati

Internet Relay Chat (IRC) is an electronic medium that combines orthographic form with real time, synchronous transmission in an unregulated global multi-user environment. The orthographic letters mediate the interaction in that users can only access the IRC session through reading and writing. They have no access to any visual representations at all. The 3-D virtual chat environment is available to computer users for interaction. In addition to all the characteristics that IRC has, the 3-D virtual environment supports users with three-dimensional graphics that represent an individual through the use of an avatar in a virtual environment.

The 3-D virtual chat room can be considered a community of practice. A community of practice is defined by Eckert and McConnell-Ginet (1992) as "an aggregate of people who come together around mutual engagement in an endeavor. Ways of doing things, ways of talking, beliefs, values, power relations-in short, practices-emerge in the course of this mutual endeavor" (p. 464).

It was initially believed that the discourse in the chat room would be linear, and therefore, easy to analyze. However, after collecting the data, the very complex nature of the discourse pushed this assumption to another important realization. Instead of focusing on the non-linear conversation (which is the type of discourses in the chat rooms) from a linear (real-life, face-to-face [FTF] conversation) point of view, the scope of the investigation was changed in order to explore the nature of discourse in 3-D virtual chat room where the visual images accompany the conversation. This is in contrast to IRC discourse, which does not allow users to benefit from visual images.

Thus, the research questions for this study were:

1. What is the nature of the context of discourse in a 3-D virtual chat room?
2. Is the 3-D virtual chat room different from text-only (non-virtual) chat room interaction in regard to invitations of speech acts?

Literature Review

The social interactions have been studied for over 25 years in order to find the patterns, routines, and the convention-based behavior in interpersonal interactions. Discourse analysis on real life, face-to-face interaction has been used to define the nature of interaction in terms of regulation (Burgoon, Buller, & Woodall, 1995; Cohen, 1996), and management (Rintel & Pittam, 1997). However, the developments in computer technology have introduced another aspect of interaction that takes place in a computer-mediated environment: computer-mediated communication.

The studies about computer-mediated communication (CMC) date back about 15 years. Early studies of CMC asserted that text-only CMC systems filtered out most social-contextualization cues and therefore greatly limited the interaction management possible for this type of social and interpersonal communication (e.g., Kiesler, Seigel, & Mcguire, 1984). However, in the early nineties, several research studies criticized this view for not considering the possibility of interaction adaptation that is claimed to occur in time by the users (Reid, 1993, cited in Rintel & Pittam, 1997). Recent research has also investigated the possible effects of interaction management strategies used in an interactive CMC medium (Rintel & Pittam, 1997).

The studies about the challenge of producing more contextually appropriate speech refocus attention on an important aspect of language use: speech acts. In terms of this study, a speech act is defined as a functional unit in communication. According to Austin's theory of speech acts (Austin, 1962), the functional units have three kinds of meaning: locutionary or propositional, illocutionary, and perlocutionary meaning. A more detailed summary of Austin's theory of speech acts, including a brief historical overview, appears in Cohen (1996, Ch.12).

The locutionary meaning is the literal meaning of the utterance or written text itself. These statements refer to what can be called objective reality on to the explanations or the declaration of the obvious situation. For example, if one person tells you that "I like dancing," the locutionary meaning would concern one of his/her favorite hobbies or activities.

The second kind of meaning is illocutionary, which implies the social function of the utterance or written text. In this case, you not only share that information, but also infer something from the statement within its own social context. The illocutionary meaning from the previous example, for instance, would be that he/she wants to go somewhere and dance.

The perlocutionary meaning is the reaction to the received stimulus in a given context. Thus, if the utterance leads to an action of taking the person to a place to dance, then the perlocutionary force of the utterance would be greater than if the request is ignored.

In real life conversational interactions, such speech acts function as determinant factors in sustaining interpersonal relationships. Invitation is one of the speech acts that initiate such an interpersonal relationship. Based on the functions of speech acts, the performance of an invitation sets up a sequentially possible next act as either acceptance or a rejection. Many researchers conducted studies to determine the patterns and the norms of real-life interpersonal communication as far as invitations are concerned (Wolfson, D'Amico-Reisner, & Huber, 1983). The patterns and the norms in non-face-to-face environments are yet to be investigated.

Rintel and Pittam (1997) investigated the interactions that develop interpersonal relationships within a socio-emotional context and the strategies employed by the users throughout the interaction process. In their study, the writers compared the CMC interactions that occurred in IRC with real-life, face-to-face communication interactions during the opening and closing phases. They concluded that interaction management in IRC was similar to that in casual group FTF interactions in terms of the general functions of the strategies used, but that the content, structure, and ordering of the strategies are considered to be subject to adaptation.

Rintel and Pittam (1997) also proposed a framework for interaction management on IRC based on their research findings. These proposals will be quoted from their research:

Stage 1: Server announces presence of newly joined user to all channel participants

Stage 2: Exchange of exploratory/initiatory linguistic tokens- repeat as necessary:

a. "blind," traditional mass greeting token to all users or
b. traditional token to individual users (followed by other phatic communication or the use of another strategy) or
c. statements or questions (interaction may follow with or
d. without overt phatic tokens)

Stage 3: Textualized exchange of conventional nonverbal contact gestures of greeting (as appropriate to relationship)- may not occur.

Stage 4: Transition signals for moving to the medial phase (pp. 527-528).

Although there is research showing the framework of IRC interaction management strategies and the comparison between real life FTF interaction and CMC, there is no research investigating the nature of the context of discourse in a 3-D virtual chat room and how 3-D virtual chat differs from text-only IRC chat. In this research, the focus is on opening sequences and on invitations as being particularly important to the establishment and maintenance of interaction, and therefore the interaction management. This research examines the extent to which these are similar to, or different from, IRC interactions, and proposes an explanatory framework for this type (3-D virtual chat) of interaction management.

Methodology

The data were collected at a virtual chat room called Active Worlds which is a 3-D virtual chat room that enables users to interact via, typed messages while representing them with 3-D avatars. The interaction between participants was initiated and maintained through typing similar to IRC chat, but participants could see each other via their avatars on the screen as they typed during the interaction; moreover, their typed speech appeared above the head of their avatars.

There are two ways to participate in conversations in Active Worlds; either as a "tourist," or as a "citizen" (the terms used by the channel owners referring to members and non-members respectively). The "citizen" participants also see themselves as being "a community" in their homepage. As a community, they communicate and interact with each other based on a series of practices in an endeavor. In the course of this "mutual endeavor," they establish their "ways of doing things, ways of talking, beliefs, values, and power relations."

The data collected for this study consisted of five 50-minute logs (written discourse) that occurred at the Gate, which is the entrance to the 3-D virtual chat room. This place was selected because it is a location where everyone has to stop before entering a chat session. The Gate functions as a social gathering room where people initiate conversation, meet each other, and invite each other to other places within Active Worlds. This function of the Gate was the ideal location to look at this community of practice. Yet, there were some disadvantages, too. Since all users stop at the Gate, there was no stability with the users. At any time, a new person could join the conversation. Second, people were free to choose a nickname for themselves and could change their nicknames at any time. Thus, it was impossible to provide any personal information about the participants such as, how many people were in the study, how old they were, their gender, etc.

In the Active Worlds, programmers post statistical information about the daily use of the resource. For the previous three weeks, the peak times for the Gate were reported by the program developers to be weekends,

between 12:00 to 2:30 p.m. Therefore, it was decided to collect the data on three consecutive weekends between 1:00 to 1:50 p.m., to ensure a relatively large amount of observable interaction.

As a qualitative form of analysis was being undertaken, the transcripts were read several times independently, and the context of opening phases and invitations were examined for all interactions that took place. Content analysis was employed to code interactions during opening phases and invitations.

The primary set was to explore and compare the data and with the IRC interaction findings of Rintel and Pittam (1997). The aim, therefore, was not to make generalizations about interactions on virtual chat rooms but to show a range of possibilities that illustrate how text-only (IRC) and text-visual (virtual) rooms present similarities and differences shaping the norms and the patterns of the social interaction. Examples are presented here from the captured screens to illustrate the points being made with no spelling or grammar corrections, and are provided with line numbers as they appeared, along with the discourse and the log numbers. The nicknames were also changed to pseudo-names to ensure anonymity of the participants.

Findings: Similarities and Differences

The interaction management strategies found in the data have been categorized under a single general heading: opening phase and invitation. These phases will be discussed in terms of their similarities and differences to IRC; and, the functions they appear to serve will be discussed in terms of two subheadings*interpersonal goals*, how people introduce each other to draw attention; and, *level of experience and acquaintance*, how experience plays a role in interactive communication.

Opening Phase and Invitations

Interpersonal Goals. Rintel and Pittam (1997) reported that in order to help create a good initial impression for the desired respondent, the choice of the nickname is crucial in a CMC environment. The choice of a nickname can refer to personal unity; moreover, it may make the other participant speculate about the user's identity. Such implications of nickname choice can be seen in the example below:

(Log 6)
85 "Ana": Is there anybody out there?
86 "spain": Hi all
87 "Ana": You must be from Spain

Rintel and Pittam (1997) also report that some users hide all personal information, especially to present selectively gender-switched or even multiple identities. In this research data, however, no cue is reported to show the relationship between nickname choice and gender. Yet, it is northworthy that CMC is an environment where virtual gender-swapping is particularly significant (Turkle, 1995). Although it is impossible to find out whether the person in the chat room is gender-swapping, it is sometimes possible when users themselves choose to reveal this information, as shown below:

(Log 4)
138 Kataline: How come no one is talking today
140 Suyev: Kataline Ill talk with you
163 Kataline: are you male or female
166 Suyev: male today
171 Kataline: Just today?
172 Suyev: Well I'm preety sure all of the time

Since it is not possible to find out which of the statements is fictitious, it can only be speculated that gender seems to be a conscious personal choice to initiate conversation. Elsewhere, gender is pointed out to be a primary concern in initiating the conversation.

(Log 3)
5 child: Cat, I'm female
8 Cat: Angel would you like to talk in metropolis
15 child: Are there any guys in here who want to chat with a 13 y/o f?

In this conversation, 'child' is trying to draw Cat's attention to initiate conversation by imposing her gender first. Cat seems to be obvious of the illocutionary force (meaning) of this statement. Yet, s/he begins by including her age. She receives no response to chat from Cat. This may be due to the fact that she did not start with appropriate opening linguistic tokens.

(Log 6)
27 Roze: hiya
28 Cindy: where r u from
30 Roze: is from NH, USA
31 Cindy: me too
33 Cindy: r u a boy or a girl
34 Roze: is 17-year-old single male
36 Cindy: u r to young for me, I am 24
37 Cindy: I am a single girl who is 24 I live in Atlanta

Although the discourse, here, seems to be contextually appropriate, the desired result was not achieved possibly due to the fact that age seems to be more important in order to continue the discourse. In initiating the conversation, Rintel and Pittam (1997) report that repetition is a necessary part of conversation. They also suggest that the use of capital letters are important aspects of the discourse. In this data, the same strategy is found to be applied by the participants. Capital letters were used to either draw attention or to emphasize a point. Several repetitions also are aimed at drawing attention and initiating conversation.

(Log 6)
70 Jey: HELLO EVERYONE
72 Saturn: WHAT DID YOU ASK?

(Log 4)
38 Silver: ANGEL ???
39 Silver: ANGEL?!?!?!?
40 Silver: ANGEL ???
43 Silver: ANGEL?!?!?!?
45 Silver: DO you want to go somewhere with me Angel?

On IRC, the perception and reflection of feelings are reported to be highlighted by the use of textual symbols such as exclamation marks, possibly used with greetings. In a 3-D virtual chat environment, typing is a mode of communication that is applied by the interactive users. In addition to this, the software enables the users to reflect their feelings of "anger," "happiness," "sadness," and physical response for appreciation through avatars. The following example shows the similarity between two chat environments.

(Log 3)
162 Angel: boooorrrriiinnnnnngggg...
160 Angel: hmmmmmm.....<yawn>
35 Sun: ^___^

(Log 6)
66 Saturn: AAAAAAAGGGHHHH

Similar to IRC, 3-D virtual chat rooms are missing all physical and social contextualization cues regarding status differentials unless the participants explicitly verbalize it. Rintel and Pittam (1997) argue that "by the time enough social status information is known to make status judgments, the interpersonal relationship will have formed in an environment conducive to equality" (p. 517). In 3-D, the establishment of social status is recognized as equal to develop interpersonal relationships and invitations.

(Log 2)
150 Lady: where do you go here duke?
157 Lady: would you like to see my duke?
158 Duke: ya my house but I hardly have the time to work on
182 Lady: iam going ther to built now

In this conversation, it is clearly seen that Lady is trying to establish a social context to initiate a conversation with Duke. For the two, having a house in the 3-D environment is a commonality which is expected to have them interact. In addition to this, there is an implicit invitation coming from Lady. Yet, it is hard to declare explicitly that their social solidarity (having a house) is the reason to participate in an interpersonal conversation.

Level of Experience and Acquaintance. Actually, IRC and 3-D virtual chat rooms are two different kinds of software in terms of their technical capabilities. On IRC, a person's nickname is presented to others on the screen by the server involuntarily. However, in Active Worlds, avatars descend from the top onto the stage when participants enter and dissolve from the screen when they quit.

Rintel and Pittam (1997) point out that depending on the number of people on the channel, newly joined users were introduced to others in the channel. Yet, due to the lack of visual cues and geographic separation of participants, they claim that there was a scope for conflict between the initially and propitiatory functions of "phatic" communication. In the 3-D virtual chat environment, however, the participants are virtually able to see each other on the screen via their avatars.

(Log 3)
243 Chantal: You will see people and you will be able to talk
246 Chantal: its more graphic and you have a body...

Body movement seemed to be an important aspect of interpersonal communication in 3-D virtual chat. Participants tend to complement their orthographic scripts with virtual appearance. Thus, visual appearance seems to function to overcome the separation of participants.

(Log 2)
15 Jean: I'm going sky diving next weekend :p
16 boabum: I am right in front of you
17 Jean: Wish me luck.
18 Angel: good luck
25 Jean: Can ya see me? :)
33 Jean : Move toward me.. You are in a pile of p(*people)*
[italics are added]

In this conversation, Jean thinks that seeing a person visually is an important aspect of keeping the conversation going. Apparently, in order to sustain the interpersonal relationship, Jean wants his/her partner to see him/her as well. Different from text-only environments, the interaction is initiated and maintained around the notion of having a body.

A Proposed Framework For Interaction Management On 3-D Chat Room

Based on the data collected for this study, it is observed that there are some similarities between IRC and 3-D chat rooms. However, in some ways, 3-D virtual environments differ from IRC. The framework developed by Pintel and Pittam (1997) for IRC interactions do not exactly reflect the findings for a 3-D environment. Nevertheless, the functions that the behaviors serve are analogous in the two media. Although the opening phase and initiative speech acts were found to be similar in both chat rooms, in the 3-D chat room, the visual representations of the participants, avatars, are found to be important for the establishment and maintenance of interpersonal relationships. The examples illustrated under the categories of interpersonal goals and levels of acquaintance illustrate this point.

Referring to the framework explicitly proposed by Rintel and Pittam (1997), some changes were made to propose a framework for the sequence of interaction on 3-D virtual environment.

Stage 1: Server drops you off at the Gate

Stage 2: Exchange of exploratory/initiatory linguistic tokens - repetition is necessary.

a. Greetings (personal information in relation to gender, age, and location)
b. Statements/questions (locutionary and illocutionary statements are explicitly used, whereas perlocutionary forces were hardly identified)

Stage 3: Textualized exchange of conventional nonverbal contact gestures of greeting as well as visualized exchange of nonverbal contact of gestures.

Stage 4: Transitional strategies for moving to the appropriate speech act based on the appropriate context.

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Arif Altun is a doctoral student in Teachers College at the University of Cincinnati, Cincinnati, Ohio 45219. Home voice: 513 569-0993. E-mail: altunar@email.uc.edu

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