

5 User Experiences

It is my heart-warm and world-embracing Christmas hope and aspiration that all of us-the high, the low, the rich, the poor, the admired, the despised, the loved, the hated, the civilized, the savage-may eventually be gathered together in a heaven of everlasting rest and peace and bliss-except the inventor of the telephone – Mark Twain, 1890⁵

5.1 Evaluation of New Social Environments

The creation of an online environment for social interaction requires consideration of a large variety of factors. Issues ranging from visual design, to computational requirements, to complex social mores all can play key roles in the ultimate success of the design and implementation of such an environment. As Meyrowitz puts it, “The introduction and widespread use of a new medium of communication may restructure a broad range of situations and require new sets of social performances” [Meyrowitz 1985, p. 39].

Talking in Circles, as a graphical audioconferencing environment, includes a large number of factors that play a role in these social performances. Several of these have been mentioned, such as the choice of color palette for participants’ representations and the physical model used for audio attenuation through the space. Quality and latency of the audio transmissions and interface responsiveness as a whole are particularly important aspects for interactive communication, and

⁵ [Hopper 1992, p. 197]

disambiguating their impact on the user experience from that of individual design elements is not easy.

In addition to these implementation-dependent performance factors, the development of advantageous uses of an environment's communicative affordances and of new social performances requires several weeks' use of the system by a stable population [Erickson 1999-R, Erickson 1999-S]. Though many users, for example, called *Talking in Circles* "very intuitive" and were able to use it as they expected, only a long-term field study of use by a moderately-sized distributed group in which at least some participants are strangers can verify that these reactions apply to broad use of the system in its intended context. As this scale of study is beyond the scope of this thesis, the following sections concentrate on observations of common experiences by a large number of non-expert users.

Talking in Circles was in development for approximately a year. Over this time around 80 people have used the system to various degrees, usually after a brief introduction to the basic functioning of motion and speech, up to five simultaneous users at a time for up to half an hour per session. Users have ranged from Media Lab students, to Lab sponsors from research labs and industry, to student and faculty visitors from various universities.

5.2 Encouraging Experiences

Reactions have generally been highly positive across the range of design features of the system. Speech communication, foremost, has been very welcome, and people (generally non-expert users of text-only computer-mediated communication) have stressed their experience of greater freedom of expression and corroborated the importance of tone of voice for their social conversations. A few users who heard the half-second latency asked about it, but in all cases where users were not colocated or could not hear each other directly they felt the audio was immediate and responsive.

The graphical feedback for speech, in the form of the bright inner circle, was initially unfamiliar to users but they quickly grasped and used it. As discussed in Chapter 3, an informal experiment had suggested that the feedback was indeed useful and allowed participants to identify speakers they hear within a few seconds. The icon bar, particularly the ability to click on icons in sequence to produce basic animations with the expressions, has been easily understood and used often. The combination of motion with the icons, such as showing a winking face and moving toward a

particular conversant or showing the gasping icon and backing away from someone, has also been popular, although not used as often.

The system's visual design itself received occasional comments, with users saying they found it fit the underlying interaction design. The informal look of the icon bar images was mentioned favorably and, interestingly, almost no users requested the ability to use custom avatars. As users become expert through working with the system for longer periods, visual design is an area they will likely have greater feedback on.

Social factors in the design were often mentioned. Users liked the sound booths' flexibility as foreground listening or background sound during conversation, and the booths' more contained audio dissipation which allowed them to converse with others outside the booths. They also were interested in the booths' contribution to the variety of the space and the possibility for shared context from seeing others' listening patterns over time. A few users joked about the lack of explicit barriers to others following them around the room or moving away from them during a conversation but said they liked the ability to mediate their distance from others through motion and conversational grouping.

Motion around the space and the corresponding changes in audio were regarded very favorably. Even when users had been told about the system's distance-based audio fading they were often surprised when they began to try it extensively and often commented on how smoothly and intuitively it worked. The generous thresholds for the maximum distance at which audio could be heard seemed to work well. Users liked having ample room for forming conversational groups while being able to faintly hear others far away. They also had no trouble positioning themselves near a sound booth so that they could hear its music or news as well as converse with others outside the booth.

While users liked the notion and experience of the audio fading, the drawing capability, and so on, they particularly enjoyed the holistic design of the space and the liveliness the different activities provided. The music and news booths, the last features implemented, were cited as central to the variety and appeal of the system for extended use.

5.3 Problems and Limitations

The major problem was overall system performance. While generally-available hardware resulted in good performance for up to eleven users, the most the system was tested with, simultaneous

activity could cause problems. People moving quickly around the space while talking and while others spoke and drew, for example, caused jerky updates in the graphics. While the audio was generally not affected, the lack of responsiveness in the interface was enough of a detraction to some users.

A particular limitation is responsiveness while drawing. As mentioned in Chapter 4, the Windows implementation had inconsistent performance due to poor thread management by the operating system. Occasionally UI updates would become very slow, rendering the system difficult to use for all modes but speech, and just as quickly the system would become fast and responsive again. Even when the system was highly responsive to motion and other graphical updates, drawing was difficult due to Java not reporting much of the mouse dragging, due to the processor being temporarily in exclusive use for other tasks.

Though drawing was still engaging and useful, it could be much improved. In addition, most users tried the system using a mouse rather than a pen tablet, which contributed to the drawing capability being useable but not ideal. A few used the system with a Wacom LCD pen tablet and found the form factor of the tablet and pen, which they could hold on their lap away from a desk, superior to the traditional desktop setup with a vertical monitor and mouse. The system was tested with a high-quality directional desktop microphone, but while it could be left on the desk or a microphone stand for hands-free speech, transmission was optimal only when it was directly facing users. An LCD pen tablet with built-in microphone or a lapel mike would probably be less constraining.

5.4 Specialized Users

Among users, particular groups with specific needs or suggestions emerged. Corporate users reported similar satisfaction and problems as others, but often requested private break-out rooms for small groups of about three people in addition to the larger common meeting space. Though users in general were happy with the distance-based audio attenuation, a few more familiar with audio technology suggested 2D or full 3D audio spatialization.

Another group of users who have found the system highly compelling have been those involved in counseling and other areas involving patient interaction, what Strauss terms *sentimental work* [Strauss 1991]. Like Rutter, Lester has found the telephone quite well-suited to certain uses in counseling and crisis intervention for a wide range of age groups, due to its mixture of audio intimacy with physical distance. In fact, the biggest problem Lester notes in telephone counseling

is the facility with which the medium leads to conversation (not necessarily therapy-oriented) [Lester 1977]. While this is another strong vote of confidence for audio communication in a sociable environment, it's important to keep these findings in mind when considering specialized uses of online environments such as in counseling applications.