Thunderwire: A Field Study of an Audio-Only Media Space

In this paper the authors mentioned that most media spaces use video and audio together and that they were interested in using only audio. They examined an audio-only media space called Thunderwire. Thunderwire is conceptually similar to a telephone party line or conference call. The only visual cue is an “on” light. The audio is high quality, allowing users to distinguish each other’s voices and background sounds. Users are allowed to connect and disconnect whenever they want by simply flipping a switch, which emitted a clicking sound. Finally, there was no way of knowing who was listening without asking. The studies showed that an audio-only media space affords a usable social space but that users have to many times adapt to audio-only conditions.

One possible flaw (or advantage) with the user sample is that the users were already listening to videotape over headphones, so using the headphones for Thunderwire was comfortable for them. The authors don’t state whether Thunderwire is aimed at people who use headphones on a more frequent basis or less frequently. If more frequently, then the user sample is perfect, if not, then the users could bias the findings.

The authors state that they conducted initial interviews, final interviews, as well as additional interviews with key members two weeks later. The term “key member” should have been clarified. Are people who talk a lot considered “key members?” This idea was slightly confusing.

In the final interview, the participants had to describe Thunderwire. I think it’s interesting that most of them provided a function description, while most provided comments about the sociability of the space. Rob stated that it’s similar to people sitting in desks around his. He says that they don’t raise their voices to talk to each other, and everyone is at their own discretion for how much they are participating.

One of the problems with Thunderwire is that users cannot tell who is logged on and who isn’t. Because of this users announced when they were logging on, when they were logging off, or simply asked who was logged on. Users who didn’t do this would receive derisive comments from their group members when caught. I think this is interesting because users know that others may be listening (so they won’t be talking about anything private), but they still expect other users to inform them that other users are listening to their conversation. Say, Abby was talking to John and Tony was listening in. Regardless of whether or not Abby knew that Tony was listening in, she would probably continue to have her conversation with John. In the case that she wanted to be polite and tried to include Tony in the conversation, it doesn’t make sense for her to be mad at Tony for not telling her that he was listening in on her conversation – he could be doing her a favor by letting her continue her conversation without any distractions.


In Situ Speech Visualization in Real-Time Interactive Installation and Performance

I like how conversations are represented as various kinds of abstract shapes and symbols emerging from the mouths of people in Reci Reci Reci. It seems really interesting; I wish there was more information about it in this paper.

Hidden Worlds is a visualization that offers an in-situ speech visualization through the use of augmented reality technology. It is an augmented speech-visualization system, where participants are able to “see” each other’s voices. The voices are in the form of animated graphic figurations that appear to emerge from the participants’ mouths while they speak. Users can wear see-through data glasses that allow them to superimpose 3D graphics into the real world. Colorful forms appear from people’s mouths when they speak. I like how the authors explained what users who aren’t wearing the glasses see – a projection at the center of the installation, making the shadows of the virtual spoken forms. The glasses sound very neat and I wish I could test one out. I like how the authors included a picture of what a user sees through the glasses. This made it easier to see what the sound looks like as well as the shadows that are cast on the table.

Another visualization that is mentioned in the paper is RE:MARK. RE:MARK is a companion piece of Hidden Worlds. In this visualization, the written name of the phoneme that is pronounced is projected on the display. Words that are not recognized show up as an abstract shape. I think it’s interesting how the written phonemes seem to emerge from the shadow of the speaker’s head. I think it adds a creative touch to the piece.

Messa di Voce is a concert performance, which allows speech, shouts, and songs that are produced by two people to be augmented in real-time by custom interactive visualization software. It combines real-time computer vision and speech analysis algorithms. The location of the performer’s head is detected in order to make the visualization appear directly from the performer’s mouth. Other things that are also detected include their orientation, position, audio signals coming from the microphone, pitch, spectral content, and autocorrelation data.

Something I believe the authors lacked the mention was the use of these visualizations. They all seem very entertaining, as he mentioned for RE:MARK, “seem especially popular with museum visitors under 10 years old.” I think that the authors should have made it more clear what the purpose of the visualizations are and what use performers can get out of Messa di Voce and people in general can get out of Hidden Worlds and RE:MARK. Entertainment is always a good thing, but it’s even better when you have a visualization that entertains and teaches you something about yourself or about others you interact with, such as the Conversation Clock in one of the other readings.
Seeing More: Visualizing Audio Cues

Conversation Clock is a visualization that allows up to four individuals to understand their participation levels during conversations. Each person has a different color. A circular structure represents the passage of time: recent conversation is visualized in the outer ring, while previous interaction is visualized in the interior ring. I think that positioning older conversation in the center of the circle makes sense because it is farther away from the individuals sitting around the table, while more recent conversations will be visualized closer to these individuals.

In Fig.1. it states that the “lengths of these bars indicate the degree of participation, measured by volume.” This statement confuses me; does it mean that someone that is shouting is also participating more? I think there should have been more clarification on why the volume is a good measure for the degree of participation.

When conducting the user studies, I like how the groups were told to plan for 30 minutes sessions but weren’t forced to stay there for 30 minutes. It makes sense that you don’t want them there longer than they have to be, causing them to force conversation, altering the data associated with the purpose of the meeting. For example, if you had a group meeting for a project, chances are the project manager would be doing most of the talking. Once the meeting is over, the other team members might start talking just as much about sports, movies, etc. This extra data would interfere with the original data, which showed that in group project meetings the project manager is the one doing most of the talking.

Fig.4 shows the level of participation based on conversations where the Conversation Clock was visible, and on conversations where the clock was not visible. I think it’s really interesting that speakers who normally talk more talked less when the Conversation Clock was displayed, allowing other who usually talk less to talk more. I also think that it’s interesting that in the session after the Clock had been displayed, users who talk a lot continued to talk a lot, while users who don’t talk as much continued to not talk as much. It seems that a balanced conversation is only achieved when the Clock is displayed. Even though users who talk a lot realized this during the Conversation Clock sessions, they continued to do when there was no Clock displayed. This might show that they feel guilty seeing so many of their lines on the Clock, but when the Clock is not displayed, they don’t care as much.

It seems that Conversation Clock mainly affected participants varying the amount of time they talked during a conversation. I think it would have been interesting to examine whether or not participants tried to not interrupt each other as much. It seems that seeing your color on someone else’s color would make you feel bad, for having interrupted them. It would’ve have been nice to somehow visualize this in a graph or something, just like Fig.4 visualized the seconds led per minute for each of the different sessions.