A Walk in the Woods: Sound Localization User Study

_____

Our user study sought to test the accuracy of sound localization within our project, as well as to gauge the overall feelings of the participants throughout the experience. In order to test the accuracy of our implemented sound localization, we created a demo program, in which a participant puts on headphones and listens to a short 3D audio track. Five participants were surveyed for this study. All participants selected had the same levels of hearing. The participants were given the con-text behind the scene as follows:

"This is a 3D audio simulation designed to immerse you into the following scene: You are sitting on the bank of a stream in the woods, and are waiting for your friend to come to join you. As your friend approaches, you will hear his footsteps, and hear as he sits aside you."

Participants were then asked to listen to the audio simulation, and answer questions based on their experiences. The questions asked to participants were as follows:

1. Which direction did your friend approach from in the simulation?
2. What side of your body was the stream on?
3. Did you find environmental sounds (such as birds chirping) to detract from the experience of 3D audio?

Below is a list of answers to each of these questions, given by the study's participants:

1. Which direction did your friend approach from in the simulation?

   Participant 1: From the right.
   Participant 2: He's coming from the right.
   Participant 3: Right.
   Participant 4: Right.
   Participant 5: From the right.

2. What side of your body was the stream on?

   Participant 1: Left.
   Participant 2: Left and behind.
   Participant 3: Behind me and to the left.
   Participant 4: Left.

Participant 5: To the left.

3. Did you find environmental sounds (such as birds chirping) to detract from the experience of the 3D audio?

   Participant 1: No, the birds were cool.
   Participant 2: No, it seemed like all sounds were equally balanced.
   Participant 3: No, I thought it added to the atmosphere.
   Participant 4: No.
   Participant 5: Not at all, it made it more realistic.

Based on these responses, it can be concluded that the sound localization that is to be fully implemented in our project is accurate enough for users to determine what direction sounds are coming from. This information will allow us to effectively craft more realistic environments within the program.