

Creative Accessibility Explorations & Findings



What:

Cross-Disability collaborations and consultations to explore the potential of creative accessibility in relation to circus arts and live music to create more welcoming environments using both digital technologies and in-person tools.



Main goals:

Is it functional, is it engaging, is it relevant for Deaf and Disabled artists and audiences?



What We Explored

- Creative ASL storytelling combined with creative description
- Deaf artists using ASL and visual vernacular while doing aerial arts
- Digital and hybrid options to support artists/audiences not present in person due to access needs
- Sound waves made visible with a tonoscope and projections
- Live heart rate pulse transformed into sound and vibrations
- Speed of a spin transformed into sound and wind (from artists & from aerial apparatuses)
- Inversions impacting sound volume (music starting when upside down/stopping when right side up) or changing sound quality (shift in live drumming or voice pitch when inverted)

- Sensory explorations: vibrations through objects that are filled with air (balloon, bouncing ball, etc.) or vibrotactile technology* (cushions, belts, etc.).

*Vibrotactile technology: A small sensor takes data (for example, the speed of a turn, the angle while going upside down, the heart rate of a performer, the distance between the floor and an aerial performer, etc.). The data from the sensor is sent to a computer that then transforms this information into sounds, lights, vibrations, air flow, and more!



Overall considerations and offerings:

- Integrating various forms of creative accessibility can create an immersive experience
- Continue working with consultants and artists with lived experience to integrate findings into functional creative access for performances
- Consideration for conflicting access needs when incorporating multiple layers, and finding a balance to keep the access functional (start simple then add layers)
- Accessibility and technology take time
- More funding needed to expand each exploration
- Barriers with lack of interpreters/access providers to support live and online experiences for artists and audiences
- For functionality, auditory/sensory explorations worked as a supplement to the audio description, not a replacement of it (does not give enough info on movements of the artists/what is happening).

Exploration - Creative ASL storytelling combined with creative description



Feedback/Questions:

- Discussions with Deaf artists Gaitrie Killings Persaud, Jaideep Goray and Deaf consultant Sage Lovell highlighted the importance of working with Deaf artists to convey creative ASL story-telling aspects to enhance performance in creative ways for ASL users instead of having hearing ASL interpreters to translate creative descriptions.



General considerations:

- More time to practice cuing Deaf artists via hearing ASL interpreters in simultaneous with open creative description for live performance
- Striving for audiences to have a fuller experience rather than the same experience

Exploration - Deaf artists using ASL and visual vernacular while doing aerial arts



Feedback/Questions:

- Deaf artists upside down: Is it functional for audiences?
- Deaf artists spinning in the air: Harder for hearing ASL interpreters to relay information to Deaf artists and creates barriers when performers have their back to the audience



General considerations:

- More time for Deaf artists to access and learn aerial before incorporating creative ASL for performances (circus residency prior)

- Barrier in so-called Toronto with the lack of cross-Disability accessible circus spaces
- Harness and sling apparatuses gave more hands-free options

Exploration - Digital and hybrid options to support artists/audiences that might not be present in person due to access needs



Feedback/Questions:

- Artists and audiences that couldn't be there in person, could still participate. The online experience was better than not having an option at all, but also a very different experience than being in person
- A static monitor with live video did not work combined with an aerial performance
- How do we share all the access information that needs to be shared at the beginning of a show and make sure that everyone who needs it has access to it?
- Having a tech day on a different day than the show was very helpful



General considerations:

- If an artist cannot perform live: more testing is needed and offering to have an engaging pre-recorded version that is performance-ready
- Hire/work in collaboration with a dedicated tech person with expertise in digital/hybrid options to support tech needs during explorations/creation and performance
- Explore more ways to have a fuller experience online (put as much care/time into digital options as the in-person options)
- Specify in access notes whether the online experience is a virtual performance versus a still video recording of the live performance

Exploration – Live Heart Rate

Heart rate monitor worn by aerialist.

Experienced through:

- sound and vibrations (via a haptic device/cushion)



Feedback/Questions:

- Amount of sensory input: Sound of heart rate plus music can be overwhelming at first. Explore heart-beat sound on its own, slowly add extra sound layers like music (manage colliding access needs).
- Can each artist have a sensor? Idea of two different heart-rate sensors with two different sounds.
- Cushion with heartbeat: created connection and feeling of intimacy between audience and performer
- Idea to explore binaural sounds to give awareness of where the artists are (e.g. climbing sounds, stretching of the fabric).

Exploration – Live Heart Rate #2

Experienced through:

1. Vibration cushions
2. Pulsing lights projected onto a wall
3. Light strip wrapped around an artist



Feedback/Questions:

- Can the lights capture the movement better? Quality considerations (long and smooth vs sharp and short)

- Interest in integrating light strips on bodies/costumes of performers or aerial apparatuses
- Light strip needs a better design to wrap around a body



General considerations:

- Softening the lights or colours switching slower to avoid flashing
- Explore other possibilities for vibration like seating options, wood (floor), and hands-free options (important for the Deaf community)
- Interest in transferring this exploration to breath

Exploration - Sound waves made visible

Experienced through music with:

1. Tonoscope**
2. Projections- numerous digital patterns/shapes that conveyed sound

**Tonoscope (built by Andrew Heule): A deflated balloon with a tiny mirror placed close to a speaker. As the sound comes out of the speaker, the sound waves hit the balloon and move the mirror. A laser pointer (pointed at the mirror) projects the sound waves on the wall making the sound waves visible.



Feedback/Questions:

- Could more tonoscopes be added for the sound wave of each instrument?
- The tonoscope felt like a new way to experience the music
- A projected graphic of frequencies: Idea to label each instrument
- Could the projections be on bodies?



General considerations:

- Projections that were slow/simple/easy on the eyes were best
- Consultants were attracted to shapes that made them feel nostalgic or simply based on personal preference

Exploration - Speed of a spin

Sensor detects the speed artists are spinning at, or the object it is attached to (ie aerial hoop).

Experienced through:

Sound (of wind) and wind/air via a fan.



Feedback/Questions:

- Helpful in depicting when an artist is spinning, speeding up, slowing down, etc.
- Wind sounds were harsh, offering to find sounds that are more comfortable to listen to or a more comfortable range to work within
- Wind/air via a fan: How to depict change of directions and other aspects of the artist's movement with air flow?



General considerations:

- Having a sensor on the apparatus for spinning was more successful vs. having a sensor on artists

- Not obvious when direction of spin changes; need a sound cue for this (e.g. sound reverses or sound of rewinding a cassette), and/or include in preshow notes
- Wind/air via a fan was an interesting sensation, but:
 - temperature considerations (option of heat vs A/C);
 - option to opt in or out;
 - adding streamers

Exploration - Speed of a spin #2

A sensor on a hula hoop with live music conveying the velocity of a spin:

Experienced through:

Vibration cushions and a fan (the speed of the wind influenced by the speed of the hoop's spin)



Feedback/Questions:

Soothing, interesting to feel the difference in vibration between the heartbeat and a spin (continuous vs start/stop/rhythm)

Is there a way for people to choose what they want to be connected to?
Heartbeat, spin, breath, etc.

How can we create a space that has many layers of accessibility and consider conflicting access needs (ie visuals, flashing, sounds, sensory overwhelm, etc)

Exploration - Inversions

Sensor that detects when an artist is going upside down

Experienced through:

sound -

- a. volume of music (louder when upside down, quiet/no volume when right-side-up); and
- b. quality of music changing (sound of instruments to distorted sounds)
- c. pitch of speech going up and down



Feedback/Questions:

- Musical choice considerations: Songs with lyrics did not work well with the song cutting in and out; instrumental music may work better.



General considerations:

- Sounds need to be in the same “world” as the other sounds and the performance in general.
- Consider the point of the axis (sensor on limbs does not necessarily convey inversion, while sensor on chest captures inversions and chest lift (clarify that both movements are conveyed)).

Exploration - Sensory explorations

Experienced through:

Vibrations - through objects that are filled with air (balloon, bouncing ball, etc.) or vibrotactile technology* (cushions, belts, etc.).



Feedback/Questions:

- Vibration of a balloon is not hands free

- How can we ensure that folks can opt out?
- Created a more immersive experience for some
- Vibrotactile technology: Can different planes be captured to give different information in a way that is functional?



General considerations:

- Possible hands-free vibration alternatives to explore: Blow up chairs, stability ball, air mattress, bouncy castle, arm rests with transducers, vibrotactile cushion on a chair back, etc.



Collaborators

Artists:

Andrew Heule (he/him)

Erin Ball (ze/zir)

Maxime Beauregard (they/them)

Gatrise Killings-Persaud (she/her)

Jaideep Goray (he/him)

VibraFusionLab:

David Bobier (he/him)

Jim Ruxton (he/him)

Consultants:

Amy Amantea (she/her_

Brennan (Bren) Roy (any pronouns)

Natasha "Courage" Bacchus

Sage Lovell (they/them)

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