360 Video Project Results

14 December 2017

Research goals and design

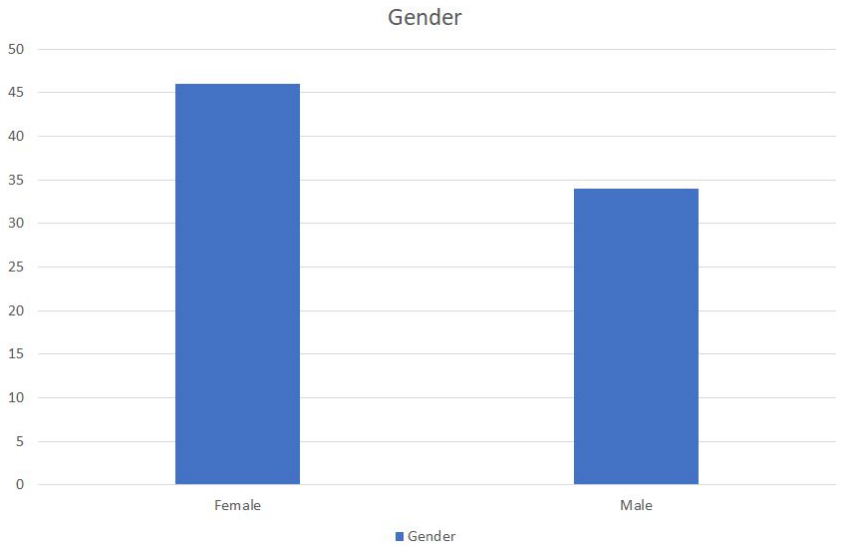
- **Goal:** Better understand viewer responses to narrative 360 videos, including different types of presence responses
- **Design:** Three viewing conditions -
  a. PC with mouse (or trackball, touchpad), built-in or small external speakers
  b. Laptop with mouse (or trackball, touchpad), built-in or small external speakers
  c. Phone-based VR headset with headphones or earbuds

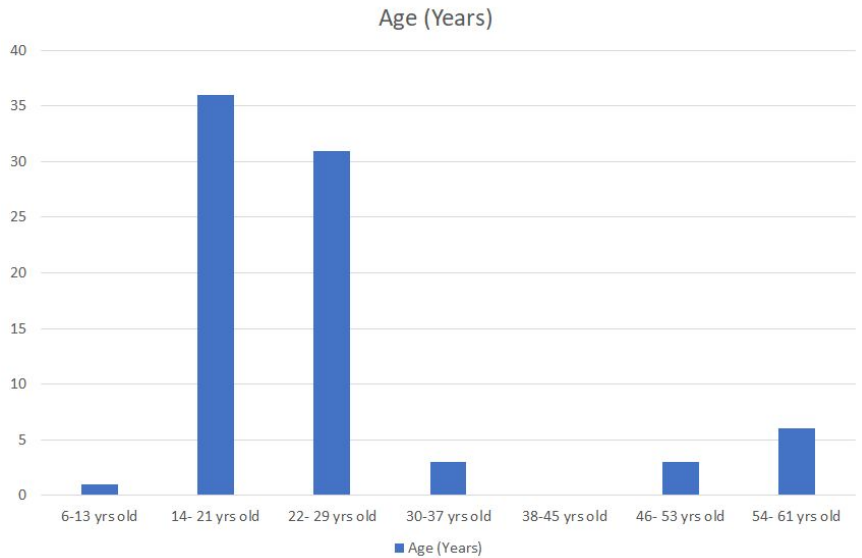
  Guided viewing and online (Qualtrics) questionnaire with detailed procedures and closed- and open-ended questions, refined over semester

Procedures

- 25 PPM students recruited friends, family, etc.
- 86 sets of responses to one of the 5 videos, randomly alternated
  (6 sets of responses from participants who watched two videos)
- Data gathered November 10 - December 8
- Mostly at homes (including dorms)

Viewer Demographics

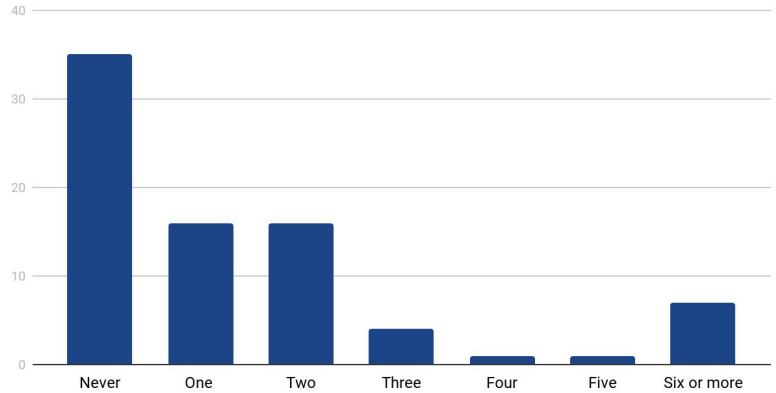




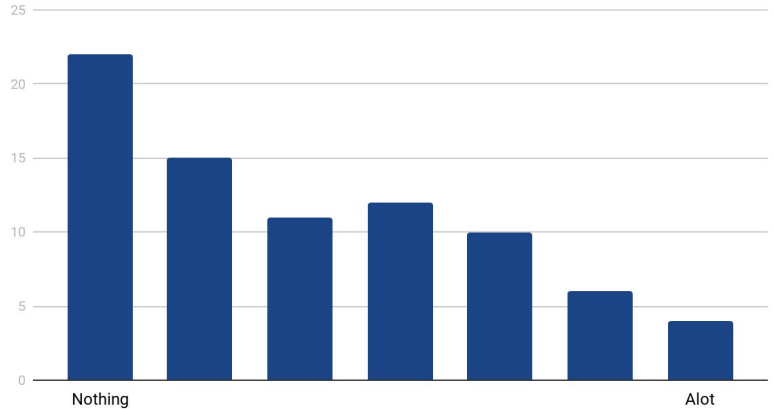
*While there was an “other” option, it was not selected

Knowledge/Experience of Viewers: 360 video

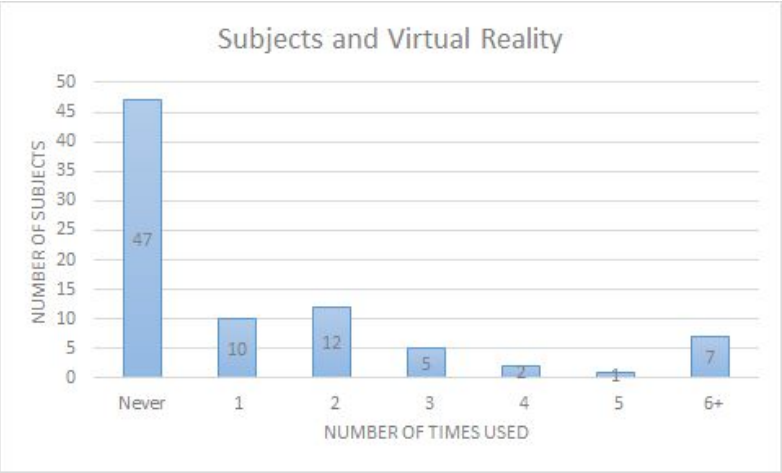
Amount of Times Participants Watched a 360 Video

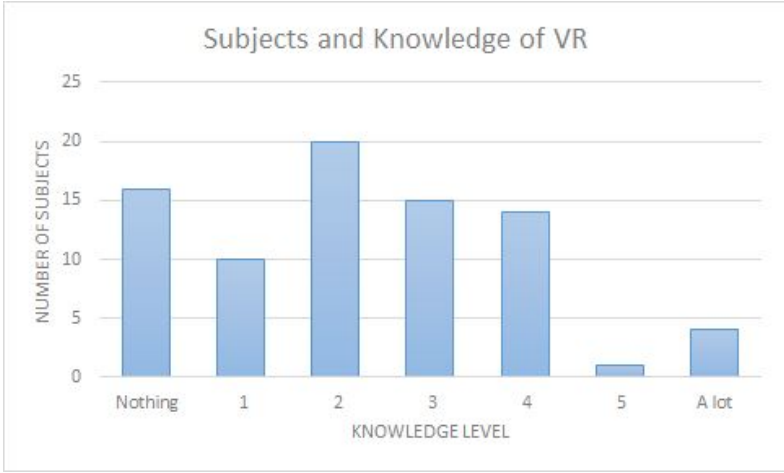


How Much Participants Knew About 360 Video

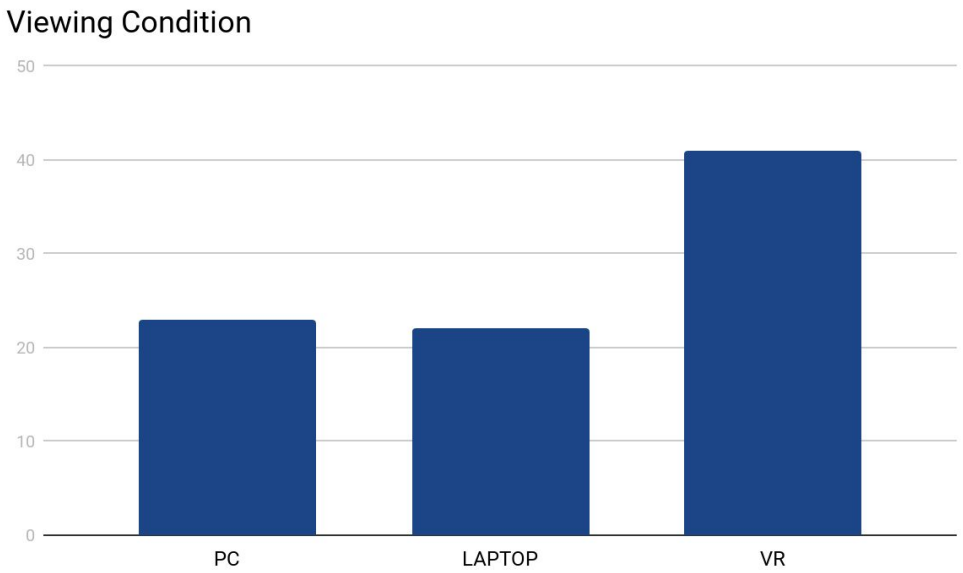


Knowledge/Experience of Viewers: VR





Viewing Conditions



(Tele)Presence

Telepresence occurs when a person feels present in or connected to the people or things in a media experience. We still know we're using a technology, but at some level we ignore the technology and just perceive the people, things and events of the experience. Examples include when we get "lost" in the world of a novel, TV show, movie, videogame or theme park ride and when we feel like we're "with" a person we talk to on the phone or in a videoconference.

(Tele)Presence Types

- **Spatial** - in the media-generated space
- **Social** - with people (real or not) via media
- Physical and psychological (mental) immersion - media dominate senses and thoughts
- Perceptual and social realism - looks/sounds and events are like nonmediated reality
- Parasocial interaction - couldn’t but felt like could interact

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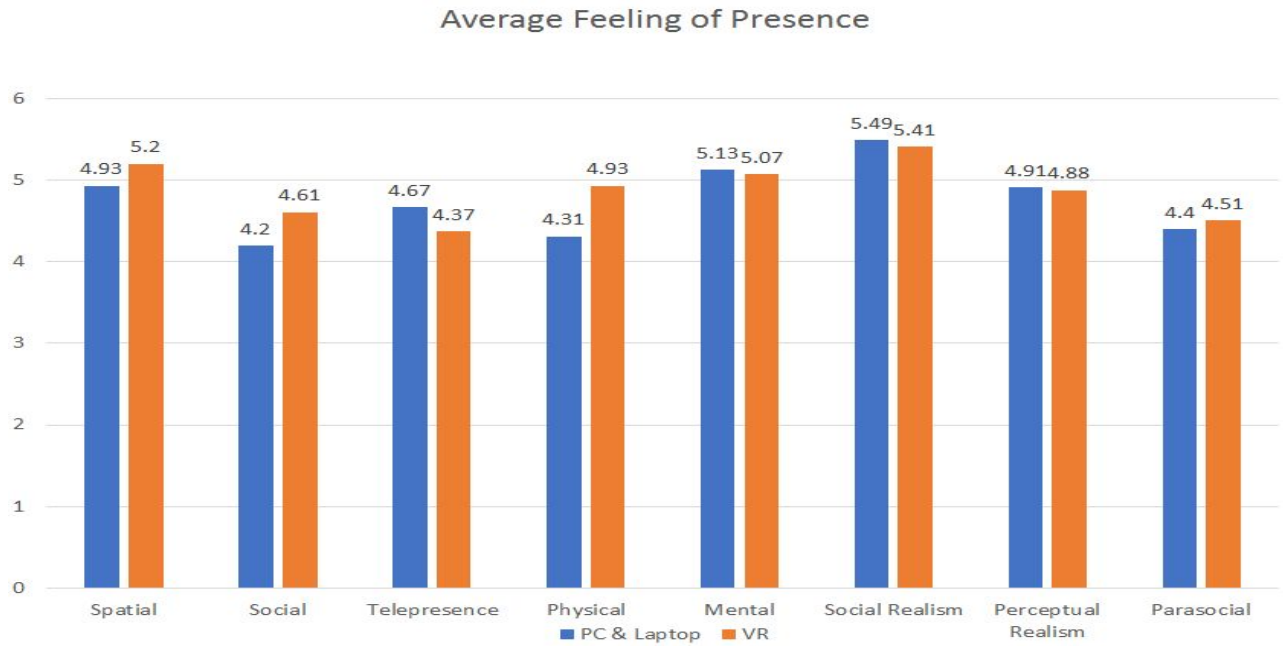
Measuring Presence



What affected strength of presence?

- **Audio** was a major factor.
  - The music was what made them feel most immersed.
  - It was “intense” and made them “feel like I was right there”
- **Placement of the camera and angles**
  - Though some people said it didn’t work, the majority said that the camera placement was good and helped them to feel more immersed.
- The majority of the people liked the 360 degree experience and thought it added to the viewing experience -one said that it **“put them in the creator’s world”**

What affected strength of presence? (cont'd)

- The 360-degree enhances the **feeling of immersion** when watching, but it also reduces the audience's **attention to the content** of the video
- Participants felt **more immersed with the VR headset** but even that had some **quality issues** - multiple complaints of the headset not being lined up and not being optimized for viewing, not fitting people who wear glasses
- Headsets ultimately **aren't interactive**, can't move backwards and forwards - participant reported feeling like a "bystander"
- People that did view on the **laptop** commented that it **took away the ability to feel immersed**, that it was difficult to move around and that it would sometimes pause

Enjoyment

- Viewers reported **high enjoyment of all videos**: near 5 on the 1-7 scale
- ***Toys* was the highest** at 5.7 (of course not all of them were intended to be enjoyable)
- Enjoyment **higher for PC/laptop** than VR (5.6 > 5.0) but differences across videos

Emotional Experience

- 44.2% of all participants felt emotional at some point during their viewing experience
  - 43.5% condition 1 viewers (PC)
  - 54.5% condition 2 viewers (Laptop)
  - 39.0% condition 3 viewers (VR)

Results for specific videos

- *Tip of my Tongue* evoked the most emotion in condition 3 (VR)
  - Viewers felt empathy for the main character (parasocial)
  - “When the protagonist was first talking on the phone I felt sad for him. Also when he was standing over the water I felt concerned” (case 1, condition 3)

- *Witness* evoked most emotion in condition 1 (PC)
  - More positive reaction to texts than condition 3 (VR)
  - “I felt it was more immersive and interactive seeing the texts” (case 28, condition 1)
  - “too high up, too fast, couldn't read it, had to close one eye to look at it” (case 15, condition 3)

Results for specific videos

- *Toys*
  - Most respondents across all conditions were looking everywhere during their viewing experience (very immersive)
  - “Everywhere there were changes occurring, when the view started dissipating into another scene, I was looking all around me to make sure I did not miss anything” (case 19, condition 2)
- *Duality*
  - More emotional response in condition 3 (VR)

Results for specific videos

- *Beyond the Color Line*
  - People responded better to the words on the signs in PC and laptop than VR
  - “You had a chance to read them and react to each one not a whole bunch of words coming at you at once” (case 57, condition 2)
  - “I wish the text was less fuzzy, maybe a different font” (case 4, condition 3)

Other Video-Specific Patterns

- Viewers watching with PC and laptop were more **engaged in the story**, whereas VR viewers were more **engaged in the viewing experience and characters**
    - (From *Tip of My Tongue's* bike scene), "I think this … helped immerse myself into the story because I viewed it from the son's view" vs. "definitely the most captivating seen. I tried to look around how I would if I were actually riding the bike."
- **Texts shown above characters** (in *Witness)* were more effective with PC and laptop, which may have an effect on emotional engagement and story immersion

Attention and navigating the space

- Viewers reported it was relatively **easy to look around the space** (5.4) and **figure out where to look** (4.9); both slightly easier for VR
- Viewers reported spending a little **more time “exploring the setting”** than “following the story” **and feeling like a “passive observer”** than “a participant” - more for VR users than PC/laptop users

What directed attention in the Videos

- A common comment was about including some sort of **directional signs, visual cues, arrows**
- **Audio** is an important directional cue
- In videos such as *Toys* the directional/audio cues were very **subtle** and could have been even more pronounced
- Many people wanted the video to **move and shift automatically** while still being in the 360 format - ***"Not having to click around the 360 would be nice. if it automatically looked around for me I'd know where to focus. I'd still get the 360 experience but wouldn't have the problem of not knowing where to look."***

Reactions to distance to objects/events

- Overall average for “Too far” to “Too close” was exactly the middle (4.00)
- For VR headset condition, multiple participants mentioned that they would have preferred to be able to **move ‘back and forth’** in the video
- Individuals using the VR condition also reported **feeling closer to the objects and events** than in the PC/laptop conditions

Perceptions of messages in videos

- Nearly **70%** of viewers indicated they **thought there was a message** in the video they saw
- Many people indicated the **large takeaways** from the videos (i.e. *Duality* examined depression, *Beyond The Color Line* explored race relations in America, etc.)
- Conversely, people also drew their own **unique meanings** from the videos
- Viewers (especially PC/laptop users) thought the 3**60 format made it slightly easier to understand** the message compared to a standard format

Picture and sound

- Picture quality (4.9) and sound quality (5.3) were **judged good**; both slightly better for PC/laptop than VR
- They indicated it was **harder to read the opening and closing credits with VR** (4.2) than the PC/laptop (4.9)

Distractions

- The participants' surroundings broke presence the most
- For PC and laptop conditions, moving the mouse or touchpad to navigate the 360 video (as well as accidental pausing) distracted the viewers
- For condition 3, the VR headset distracted the viewers, either because it was heavy or the lens needed to be adjusted
    - "Just using 360 video yourself and having the ability to control the camera is a bit distracting."

Final Comments from Participants

“I felt the message they were trying to get across was shown very well”

“ it was a cool idea and the way the walls disappeared was really fascinating to watch”

“You guys did a very great job! Keep going!”

Limitations and Suggestions for Future

- This was small, exploratory “field’ study so **can’t over-generalize**
- Need to better understand the **limitations of 360 video** - inherent factors (limited interactivity, hard to direct attention) and those being addressed as tech improves (resolution, headset weight)
- Think about more ways to **adapt traditional narrative styles**, and especially **create new ones**, for this intriguing emerging medium!

Thank You!