

# That's Me and That's You

## Museum visitors' perspective-taking around an embodied interaction map display

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### Introduction

History museums strive to connect visitors' culturally situated "little narratives" to social and historical "big narratives" (Rowe, Wertsch, & Kosyaeva 2002). With CoCensus (Roberts, Radinsky, Lyons, & Cafaro, 2012), users collaboratively explore U.S. census data representing them on a large, shared display. This paper explores one facet of narrative creation – positioning – during the collaborative exploration of the interactive map. We assert that visitors' usage of personal pronouns can similarly elucidate the immersive depth and degree of embodiment in the narratives visitors construct with an interactive museum exhibit.

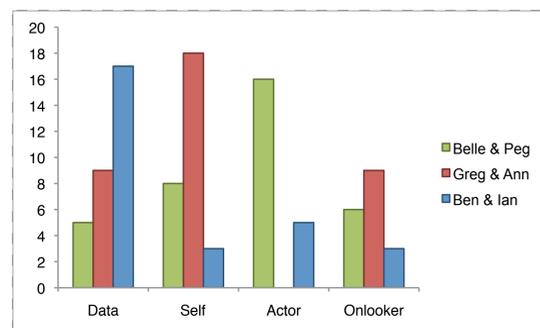


Users Ben and Ian (pseudonyms) interact with the display.

### RESULTS: Three Cases

These three pairs of visitors interacted with the display in very different ways. Analysis focuses on:

- the number of turns in which pronouns were uttered
- the visitors' movements within the space
- the relationship of the two over the duration of the interview.



Codes applied to the three interviews. These three cases demonstrate strikingly different interactions with the display.

### Acknowledgements

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More Information  
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### Methods

- Eight semi-structured interviews lasting between 7 and 20 minutes *in situ* at a small history museum
- Visitors chose one of 23 individual or grouped ancestries (e.g. "German" or "Other Western European") that represented them, then were given an RFID tag coded with that ancestry.
- Broad, open-ended questions about visitors' interpretations of the display, such as "What do you see in this display?" and "Does anything you see in the display surprise you?"
- Researcher also answered participants' questions and prompted visitors to move to highlight the display's interactivity.

**Positioning** Transcripts were analyzed for pronoun usage to indicate visitors' connection with the data.

From Brunyé et al., 2009

#### Actor



First-person pronouns, talking about the mapped data as if they are within it.

"We're along the Lake."  
"That's me and that's you."

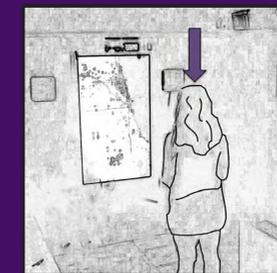
#### Onlooker



Third-person pronouns, talking about "others"

"Their cultures are different."  
"Polish are inland."

#### Self

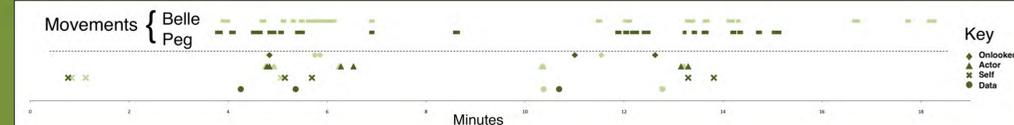


Pronouns referring to the visitors themselves, rather than to the people represented by the data.

"I'm German."  
"You're part French too, right?"

### Case 1: Belle & Peg, colleagues

"Actor" was the code most frequently applied.

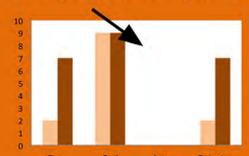


The timeline of Belle and Peg's interview shows them instrumentally operating within the system. Both women moved frequently, and their increased periods of movement around minutes 5 and 13 corresponded with their use of the actor perspective.

- Highly engaged.
- Spatial characterizations, e.g. "It looks like I'm along the Lake," (Belle)
- Inferences about patterns, e.g. "We're farming folk!" (Peg).
- Connections to museum, e.g. would their groups would be "this well represented in Jane (Addams)'s time?"
- Explored multiple connections to "big" narratives.

### Case 2: Greg & Ann, couple

Neither used the actor perspective at any point.

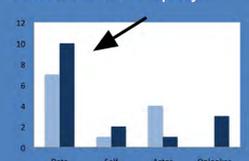


The timeline shows Ann frequently moving around the space. However, many of her movements were side-to-side, which did not affect the display, indicating that she did not understand how to operate the system.

- Did not "instrumentally operate" the system.
- Lack of personal connections to the data, e.g. "I just...think it's a stinky way to have to identify yourself." (Ann)
- Used display as springboard to share personal stories.

### Case 3: Ben & Ian, father and son

Many references were to the data on the display.



The first few minutes of the interview were devoted to interpreting the display, with the son, Ian, trying to direct his father about how to interact. Finally after almost 6 minutes in the interaction space they began discussing the data.

- Middle ground between other two: some interactivity but not as deep as Belle and Peg.
- Ian (son) easily adopted actor perspective, e.g. "That's me, and that's you."
- Ben struggled to interpret the overlapping transparent bubbles and tried to find an "optimal distance" from which to view the display.

### Ongoing Work

We are currently testing the CoCensus display at an informal science institution, iterating upon the design to further engage visitors in connections between little and big narratives and leveraging these connections to support learning. For example, we are exploring how the interactivity of the exhibit can allow users to explore multiple data sets--such as allowing visitors to manipulate a personal census variable (e.g. ancestry) while viewing additional data overlays--and how this affects quantitative and geospatial reasoning with the data. Additionally, we are implementing a timeline feature to afford temporal reasoning using historic census data, allowing visitors to use embodied operations that move the data across time.