

## Supplemental Material Description of Contents

### osfstorage-archive.zip - Dataset of Sketches and Interview Transcripts

The full dataset is available at [redacted for anonymous review] and is included in a zip folder here. The dataset contains all 28 sketches and interview transcripts and a CSV table of the order in which the participants drew the dataset (to support code MM-OG2).

### codes.md - Open Coding

During the interview collection process, we individually open-coded the existing sketches and transcripts and periodically met to discuss the sessions that every co-author had read through. We tracked the provenance of the development of our codes via GitHub. Below is an excerpt of our `codes.md` file, with the full file (approx. 7500 words). We included a highlighted version that shows our computing vs. non-computing participant analysis in the Supplementary Material.

```
Formatting conventions
=====
```

```
## Themes are written as first-level headers
- Codes are written as next level, subcodes as the following level
- Evidence is listed as bullet points.
```

```
Themes & Codes
=====
```

```
## Mental Models
```

```
These codes describe observations about mental models and their
formation.
```

```
...
```

```
### MM5. Affordances can be part of the mental model.
- File System:
  - [Session 006] (LINK REDACTED) - describes mental model as
subset of given data as they navigate it, similar to Windows
  - [Session 012] (LINK REDACTED) - drawing notes interaction,
discussion mentions the drawing cannot be interactive
  - [Session 021] (LINK REDACTED) - participant describes drawing
for others as recreating idea of what interactions would be in place
```

- [Session 030] (LINK REDACTED) - when asked about idea, they talk about the interactions to navigate the hierarchy
- [Session 033] (LINK REDACTED) - inset to show nested folder confirmed to include interaction
- Junk Drawer
  - [Session 022] (LINK REDACTED) - basket drawn for carrying

### MM6. Physical objects can be used to represent data.

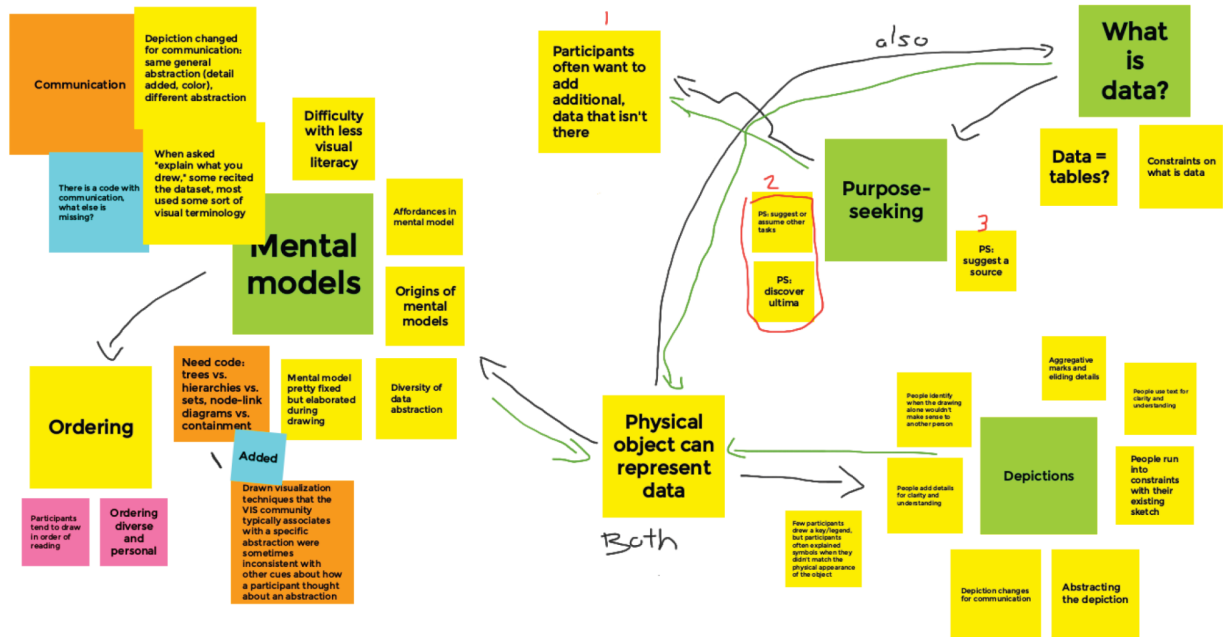
- This code cross-references mental models, depictions, AND what-is-data, but as these were what the participant thought of, we placed it here as the main one.
- Their organization (e.g. orientation, appearance, affordances) is based on the real world

- Appearance: based on / tied to memories
  - [Session 008] (LINK REDACTED): the cooling towers
  - [Session 013] (LINK REDACTED): the pencils, etc.

- Affordances:
  - [Session 015] (LINK REDACTED): "physical" folder, issue of running out of space, words about putting things into the folder and it becoming out of shape: "Having a folder inside a folder, I guess. So that would - I guess since I'm imagining it physically, it would be cumbersome to have a folder inside a folder."

# Jamboard.pdf - Virtual Axial Coding

We identified core concepts in a process similar to Thematic Analysis via a JamBoard, shown below (full size figure: Jamboard.pdf). This visual organization later helped us with our axial coding of the rather long document codes.md.



Key: Yellow is a base code, Green is an umbrella code, Orange is a TODO code

Our Jamboard while we were in the process of comparing and combining our codes. Yellow sticky notes are base codes (lifted from the codes.md file). Orange notes were "TODO" codes that needed more refinement. Green sticky notes are "umbrella codes" that turned into our five main themes: mental models, purpose-seeking, depictions, beliefs about data, and communication (marked as TODO in this snapshot).