Give three concrete examples of how visual/pictorial representation is (or could be) useful for some aspect of a research study. For each, explain how it helps with understanding. (Examples from different areas are fine. These don’t actually have to have happened; just that they might be possible.)

Although visual representations’ reputation in Cognitive Systems research studies is more closely associated with ambiguity than clarity, they can expand options within design validity for researchers.

Consistently along the progressive embodiment journey from multimodal awareness to holistic supramodal integration of sensory systems, researchers could isolate virtual reality participants to clearly articulated, verbally described events, while asking them to draw a visual representation of an event completely unrelated to what they are hearing. When the virtual world begins to model autonomic senses, facilitators could again manipulate auditory and visuo-spatial cues to compare effects between poles of complete embodiment in both worlds; do participants consciously perceive conflicting mental states while in a different environment and other senses have been fully integrated? Did the ability to distinguish strengthen, or would results successfully challenge routines of maintaining coherence and supramodality in the body schema?

Visualization in a study intends to contribute insight rather than affordance, which is proved through the mapping of nonspatial abstractions into effective visual form. Information visualization translates perception into a cognitive supplement for large-scale databases representing a holographic system. In an experiment measuring HR abilities to restore language in Broca’s area after a stroke, this visualization can help portray the interdependency of neural networks.

Implementing visual representation feedback methods in addition to traditional linguistic forms of self-survey and participant criteria in Cognitive Systems’ interdisciplinary, communication-based procedures can expand inclusiveness and accessibility to neuro-diverse individuals whose cognitive processes may suffer from varying mental state intuition abilities. Though humans with autism, for example, may struggle with spoken and written language communication, their potential for visual functioning is greatly varied. With more flexibility given to pictorial representations as forms of participant feedback, through replacing words with visual forms of instruction in philosophical theory identification, the immediate urge to ask contextually different questions or interpret results based on an assumed perspective of each group rather than preferred modes of communication may be undermined. Though differences in varying perceptual makeup of each participant do pose valid risks of confounding variables growing, this communication tool can find a place in the frameworks of many research theses and provide more options for differently abled individuals to express ideas with greater accuracy. This flexibility may also provide a research methodology with more reproducibility in different physical environments.
Visual representations have evolved into more than flowcharts; their abilities to uphold consistency and establish more transparent procedures in research studies should be carefully valued in scientific research.