

Valeria GIARDINO

“Diagramming”: Connecting Cognitive Systems to Reason

The goal of the talk is to discuss in an interdisciplinary framework why different forms of visualizations are commonly used to externalize thought. First, it is assumed that they are widespread because they amount to cognitive advantages. Second, it is conjectured that these cognitive advantages depend on humans’ complex cognitive architecture, and in particular on their capacity of *diagramming*. By diagramming, humans recruit several systems already available for perception or action – such as the visuo-spatial system, the conceptual system, and the motor system – and establish an external connection among them, by means of a particular cognitive tool. This enriches humans’ inferential powers.

The methodological strategy is to test the existence and the scope of diagramming by looking at two possible instances of it. The first instance is the use of gesture “for the self”, namely for reasoning and not for communicating; the hypothesis is that physical objects such as maps or tables are a kind of “crystallized” gesture. The second instance is the use of spatial representations in mathematics; the hypothesis is that most of the systems of representation are used dynamically as spatial interfaces where a connection among different cognitive systems is established.

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