

Human Creativity through Dooyeweerd's Philosophy: The Case of Creative Diagramming

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Abstract : Human creativity knows no bounds. More than a millennia ago humans have expressed their knowledge on cave walls and on clay artefacts. Using visuals such as diagrams and paintings have always provided us with a natural and intuitive medium for expressing such creativity. Making sense of human generated visualisation has been influenced by western scientific philosophies which are often reductionist in their nature. Theoretical frameworks such as those delivered by Peirce dominated our views of how to make sense of visualisation where a visual is seen as an emergent property of our thoughts. Others have reduced the richness of human-generated visuals to mere shapes drawn on a piece of paper or on a screen. This paper introduces an alternate framework where the centrality of human functioning is given explicit and richer consideration through the multi aspectual philosophical works of Herman Dooyeweerd. Dooyeweerd's framework of understanding reality was based on fifteen aspects of reality, each having a distinct core meaning. The totality of the aspects formed a 'rainbow' like spectrum of meaning. The thesis of this approach is that meaningful human functioning in most cases involves the diversity of all aspects working in synergy and harmony. Illustration of the foundations and applicability of this approach is underpinned in the case of humans use of diagramming for creative purposes, particularly within an educational context. Diagrams play an important role in education. Students and lecturers use diagrams as a powerful tool to aid their thinking. However, research into the role of diagrams used in education continues to reveal difficulties students encounter during both processes of interpretation and construction of diagrams. Their main problems shape up students difficulties with diagrams. The ever-increasing diversity of diagrams' types coupled with the fact that most real-world diagrams often contain a mix of these different types of diagrams such as boxes and lines, bar charts, surfaces, routes, shapes dotted around the drawing area, and so on with each type having its own distinct set of static and dynamic semantics. We argue that the persistence of these problems is grounded in our existing ways of understanding diagrams that are often reductionist in their underpinnings driven by a single perspective or formalism. In this paper, we demonstrate the limitations of these approaches in dealing with the three problems. Consequently, we propose, discuss, and demonstrate the potential of a nonreductionist framework for understanding diagrams based on Symbolic and Spatial Mappings (SySpM) underpinned by Dooyeweerd philosophy. The potential of the framework to account for the meaning of diagrams is demonstrated by applying it to a real-world case study physics diagram.

Keywords : SySpM, drawing style, mapping

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