

Folding with Endless Potential: Origami as a Doorway to Innovation

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Abstract

Today origami is used to research many areas, from nanotechnology to cosmology; we believe this is no coincidence. Origami artist Tomoko Fuse defines origami not as an act of creation, but of *discovery* (Fuse, 2015); and we whole-heartedly agree. In a spirit of discovery, we propose that origami's versatility, and its ability to demonstrate the phase transition from structured to unstructured states implicate it as a transdisciplinary real-world meta-material.

Seeing the fold as a process of becoming or *ontology*, through the writing of Levi Bryant, David Bohm, and Filipe de Salles, we argue the endless pleated folds of origami are not only a metaphor for how things come into being, but are also an embodiment of wavelengths and other holistic processes. By resonating aesthetically with deeper, hidden, and connecting orders of reality through the subjective experience of folding, we propose new ways to discover innovative approaches to research.

In this paper we broadly illustrate contemporary holistic modes of knowledge (Rojcewicz, 2021), and a method of artistic research we call 'observationism' that allows us to see both on and beyond the surface of things. Firstly, establishing the theoretical grounding of this project we

then demonstrate our methodology with a Living Lab pilot project at University College Cork, 2023, funded by the Strategic Alignment of Teaching and Learning Enhancement (SATLE).

The Fold as Living Lab explores several origami folds as a transdisciplinary, materials-led, innovative research tool across areas that include Contemporary Art, Robotics, Design Thinking, Microbiology, and Teaching and Learning. By our main argument and methodology, supported by results in the form of previous publications and participant feedback data, we demonstrate origami as a doorway to innovation in potentially any field, allowing anyone to access the endless potential of the fold.

Key words: *Origami; Innovation; Creativity; Transdisciplinarity; Aesthetics.*