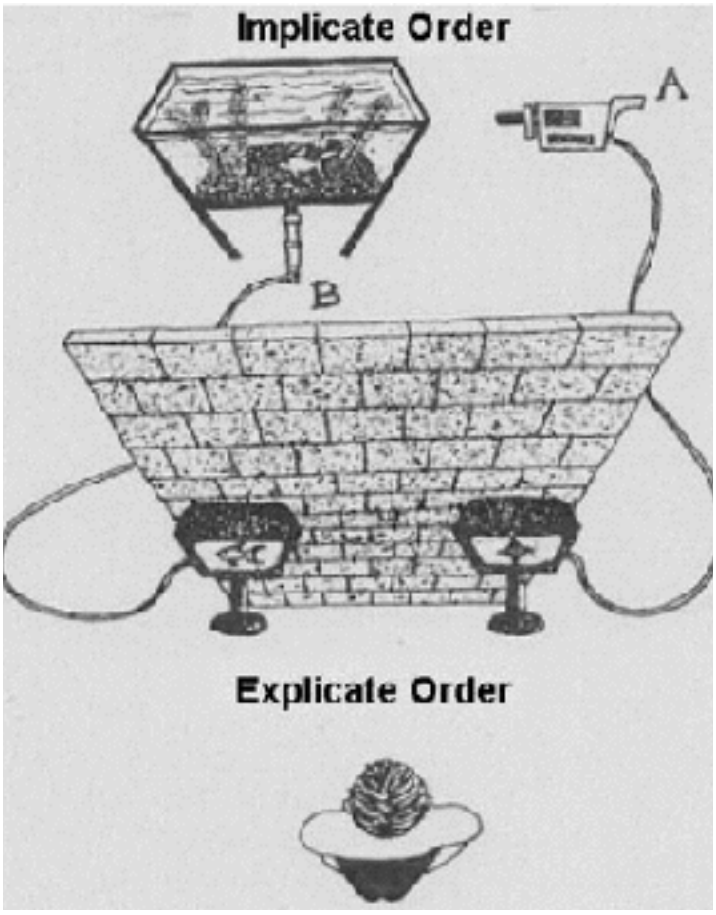
ALEX PENTEK. UN-FOLDING REALITIES. 2022.
VIDEO PERFORMANCE. SOLSTICE ARTS CENTRE.

This short performance lecture explains the fold as an ontology, or a site of transformation between ‘being’ and the ‘field’ from which it both arises and enfolds within itself. Drawing on ‘The Origami of Being’ and the writing of Levi Bryant, and also my material led artistic research in Design Thinking and Robotics, I introduce these ideas through a visual vocabulary of folds to allow us look both on the surface and beyond the surface of things.

REVERSE FOLD: HIDDEN MEANING

Beginning with the question ‘what is fold?’, I demonstrate how a simply folded sheet of paper also folds the space around it. Introducing a more complex reverse-fold, I use two pieces of identically folded paper to explore the idea of hidden information beyond what is obvious. While appearing to be unrelated at first glance, information from each piece of paper is enfolded and hidden within the folds of the other. This explores the idea of a hidden or ‘implicate order’, that is inaccessible to us and an ‘explicate order’ that we experience. Physicist David Bohm uses this idea to explain quantum entanglement, when a pair of particles, such as electrons are energised by an event together but then separated. Being entangled means measuring one particle will indicate the state of the other *instantaneously*. If the pair happen to be a great distance apart, this can be seen as instant communication faster than light, breaking the laws of physics. Bohm uses the implicate and explicate boundary to explain this without breaking the laws of physics by not being two events but actually being a single ‘non-local’ event that is spread over space-time. While Einstein doubted this idea, calling it “spooky action at a distance”, entanglement is now the basis of quantum computing. (See drawing).



David Bohm - Entanglement.

Here, a gold fish in a tank is hidden behind a wall to represent a quantum entangled event hidden from view in the ‘implicate order’. Camera A and camera B record two separate live streams of the fish from different perspectives that appear as separate events on the other side of the wall accessible to our experience, which is the ‘explicate order’. When the fish wiggles its tail, it’s as if two separate events are communicating instantaneously, breaking the laws of physics. In reality it is the same entangled event spread ‘non-locally’ over a distance.

WATER-BOMB FOLD: THE ORIGAMI OF BEING

Talking about ideas of folded space and entanglement through folded paper, I introduce Bryant's idea of the ontology of the fold and origami of being with a traditional origami water-bomb fold. Seeing ontology as the metaphysics of being, the various factors that allow things to exist and the relationships between these factors, Bryant's paper 'The Interior of Things; The Origami of Being' looks at folded ontology by a number of examples that include a vortex or cyclone. Michael Serres calls the vortex a 'primal form', folded into existence by a process where surrounding weather and wind patterns are enfolded into an emergent process of becoming. By using an origami sphere that transforms into a vortex and dissipates back into a sphere, I show how one of Bryant's cyclones might come into existence

Emergent processes occur when a series of factors combine to give unique configurations that are greater than a sum of their parts. Seeming to be sometimes solid and stable, these unique events or objects fade over time back into the fields they emerged from. With a certain degree of artistic license I demonstrate this idea through the 'water-bomb' fold which is extremely flexible and is used in robotics and micro-medical devices. The key idea here is movement, which is an area that I aim to continue to explore in my research.

MIURA FOLD: PARADOX

The final fold I introduce is the 'Miura' fold, developed to send astro-solar sails into space by Japanese engineer Koryo Miura. This surface is folded into a series of interlocking and overlapping facets or surfaces to demonstrate Wittgenstein's idea of Family Resemblances. Family resemblances describes reality as a series of family portraits which have no single common feature, (truth), only a series of overlapping traits. The subjective differences of these portraits is represented by the different facets of the Miura fold, and their combined qualities and commonality that changes between different families compares to ideas of community and a multi-faceted whole.

The twisted surface creates the physicist's anomaly of the möbius form, that can be said to have only two dimensions but which exists in three dimensional space. Following the form with my hand I demonstrate that it makes one continuous endless surface. From the perspective of being on this surface there appears to be an inner and an outer surface which compares to the dichotomy between our 'thoughts' and the 'world' and the view that these are always connected. Moving away from the möbius surface to a 'God's eye' view moves beyond these problems, allowing us to see it as a single multifaceted whole. This introduces an Observationist perspective that sees the connections between Wittgenstein's family resemblances as a possibility for creating new communities. But this also leaves the problem that such a perspective might not be possible for those who cannot leave the surface of the möbius form. In other words, an ultimate description of reality might essentially be always incomplete and paradoxical in nature.

Moving in this direction may be ultimately beyond thought, but it is an area that remains open to being explored by artistic research of the fold as a site of transformation. The nearby möbius sculpture symbolises this paradox and being folded from hidden fields of possibility.