Bring out the 'Waves': unleashing the power of the image across the board, almost

Does an artist's process come in contact with the *building* of a model in a scientific framework? In this presentation I will use the recent awarded photographic work by French artist Sarah Ritter 'Les Vagues Scélérates' ['Rogue Waves'] (2022), created after visiting a lab at the CNRS, as a case study to explore if an artist's methodological practice could serve as a one more tool for the team involved in the *building* of a scientific model.

The presentation will be divided into two parts:

In the first part I will initially set the framework, as I am trying to create a link between the meta-modeling of two seemingly separate realms in terms of their goals: art and science. Science aims for knowledge which is literal, while art is metaphorical in character. Yet, does the fact that they have a different aim necessarily mean that they can't be sharing, informing or even inspiring each other's practice in a concrete way? Taking this discrepancy into account, I will aim to bridge it by exploring the layers of composition in the modeling of the making of the photographic work 'Les Vagues Scélérates' and shift the discussion to what may unite the two realms, i.e possible similarities in their processes, instead of what keeps them apart, i.e their different goals.
At a first glance it seems that the work is straight forward and is in reference to the CNRS lab's research models on the waves. However, the core of the project stems from 'how' Sara Ritter linked the waves to the different constellations of analogies as played out in science, such as the isomorphic movements of light waves and oceanic waves, as well as to a metaphor, which is no other than the title of the project the 'Vagues Scélérates'; a metaphor which has been crystallized as a set phrase and is also loaded with an interesting story. Rogue waves were considered as fiction, a naval fable, and it wasn't until some decades ago that they were tracked by satellites to be now rendered as a phenomenon for scientific study. Those humongous waves, which appeared as out of nowhere in the ocean only to disappear after a while, went from invisible (as they were only stories) to visible (when they were visually recorded) to being modeled. In addition to that, and according to Ritter's research, rogue waves have also been detected in optical fibers, where they are studied, and their behavior is also projected onto the water. With her work, through analogies, parallels and links, Sara Ritter brings the metaphor alive with a different purpose, this time to bring in the tensions between the artificial and the natural, the impossible and the possible, the fictitious and the 'real'. But is it just that? A metaphor brought to life through an artist's interpretation? I will propose that it is also a visual metaphor. In that light, and following philosopher's Michalle Gal's thesis on visual metaphor that 'it is a mechanism of *syntactic structure, forms and material composition,* which goes along with perception of structures and of compositions' I will propose that an artist's process may be closer to the modeling process performed in labs (with pathways and modeling) than the existing categorization has it (Gal,2019).

For the second part I will first introduce how model reasoning is applied in scientific research using examples from philosopher of science Nancy Nersessian who has been extensively working on the field from different angles for the development of scientific research; in specific, her work on metaphor (Nersessian, 2015) and on the cognitive roles of

models and pathways in the building of cognition (Chandrasekharan & Nersessian, 2011). I will draw similarities in the process of modeling and in the artistic process of Sarah Ritter, concentrating on the specific work. I will then set some open questions: Why isn't the compositional process used by visual artists, and especially of photographers whose analogies and metaphors can often be 'atopic', more acknowledged and used to enhance the building of models? And consequently why are we only using either computational images or illustrations for modeling and explanations, or for that matter for any sort of abstract and theoretical thinking?

I will bring to the fore two objections. The first one that photographic images would need to be first interpreted to be operable for the purposes of the modeling building. I will attempt to rebut that by showing it is based on two misconceptions about photography and the process of its making: 1/ the prevailing understanding, outside the artistic community of photography and the arts, that photography is attached to the 'real', occasionally with a 'twist' and is incapable of conveying tensions, structures, rich syntaxes which can be *built* and as Gal supports read independently as image-units 2/ and consequently that we are still always looking for the 'what' and not the 'how' in the images created on a conceptual level. The second objection will be on a more pragmatic level, stating that in theory the modeling may have similarities but that it would be unfeasible standardizing methods to incorporate photographers working with scientists in modeling. There are plenty of examples of collaborations, but these are mostly contained in co-creating art-science artifacts. For that, I will stress that the proposition is not for an artist to make a model or create a photograph to replace a computational model. It is more to set an open question on how far a photographer's meta-modeling, as it were, can supplement the meta-modeling of those who design external representations in science labs; and if there are stages in the making of the model/experiment where image documentation or design could be strengthened by fictitious or denser images with different techniques (super-imposing, collages, montages, etc) to bring richer visualizing results for those who are assigned to create the model, empowering their imaginative skills and visual abilities.

References

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