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A Metaphorical Language for Modelling

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Abstract: *»Eine metaphorische Sprache des Modellierens.«*. The workshop "Thinking in Practice" aimed to integrate both theoretical and practical methodologies. Therefore, we organizers decided to combine free discussions with more playful moments, along with some focused confrontations. These playful moments were intended to establish each workshop participant's position with respect to modelling, as well as to grasp and stress the most salient concepts emerging during the different sessions and discussions. This was in fact a purposeful methodological choice that allowed us to correlate the use of certain metaphors as models for the discussion, and as paths and guidelines for the various focus-exercises.

Keywords: Metaphor, model, modelling, discussion, exercise.

1. Some Notes on Metaphors

The workshop "Thinking in practice" to which the contributions in this HSR Supplement go back, aimed to integrate both theoretical and practical methodologies. Therefore, we organizers decided to combine free discussions with more playful moments, along with some focused confrontations.[1] These playful moments were intended to establish each workshop participant's position with respect to modelling, as well as to grasp and stress the most salient concepts that emerged during the different sessions and discussions. This was in fact a purposeful methodological choice that allowed us to correlate the use of certain metaphors as models for the discussion, and as paths and guidelines for the various focus-exercises.

I strongly believe that metaphors, as figures of speech, have the capability to reveal the multiple aspects involved in a discussion; they express the necessity for any philosophical activity, and for any scientific discussion more generally, to find a balance between creative freedom and the precision and formality of philosophical and scientific discourse. Moreover, metaphors involve the double aspect of the philosophical constitution of discourse: *institution discoursive* (a

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[1] See for example Dal Lago and Rovatti 1993.

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mediation between "text" and context) and *instauration discoursive* (the relation between forms of expressiveness and speculative schemes) (Maingueneau 1995, Cossutta 1995). In this way, metaphors express the close relationship between ways of talking and ways of behaving in a discussion (Cattani 2001).
It is certainly restrictive to narrow the investigation of metaphor to fields like poetry or literature, just as it is restrictive to understand metaphor exclusively as a synonym for trope, or to consider tropes as a sort of violation of the maxims of cooperative communication. I hope it is no longer necessary to demonstrate, as Mary Hesse (1966) pointed out, that metaphors are not decorative literary instruments but rather essential processes of knowledge. Therefore, an essential part of their "nature" is that they function as arguments in philosophical discussions.

I consider philosophical discourse as *constitutive*; therefore, language is not only an instrument for philosophical communication.[2] In this sense metaphors are conceptual processes that contribute to structuring our world.[3] They are more than imaginative structures: they are not used just to remedy a conceptual insufficiency, but also to enrich argumentation. In no way does metaphor play a subordinate role. Following contemporary research on metaphor, I see metaphors as the result of an interaction between a word or an utterance and a context: they create new similarities, rather than only showing and expressing a similarity that already exists.[4] A simple juxtaposition between two domains or two terms is not sufficient to produce a metaphor. A metaphor is not a conversion into simile (whereby a metaphor is considered a form of comparison) or *vice versa* the simile converted into a metaphorical form. Metaphors open up to new contexts of meaning and become fruitful lenses and models with which to analyze and guide scientific discussions and the rationale underpinned (Tagliagambe 1997, 291).

Using Fauconnier and Turner's theoretical model for analyzing metaphors in *Conceptual integration network* (1998), I begin by discussing the common

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[2] "Contemporary philosophies, have not only recognised the role of language as in indispensable instrument of philosophical communication, but have understood that the choice of a linguistic form is neither purely arbitrary nor simply a carbon copy of reality. (...) The form is not separable from the content" (Perelman and Olbrechts-Tyteca 1991, 45).

[3] See the "Introduction: why metaphor matters to philosophy" in Johnson 1995, in particular p. 159: "we human are metaphorizing animals".

[4] The status of metaphors takes a fundamental shift between '500 and '600. Abandoning the prevalent line that saw metaphors as pure ornaments of discourse, metaphors became a full part of cognitive processes even if they were still undermined by imaginative elements: "quasi in miraculoso modo gli ti fa travedere l'un dentro l'altro... mirar molti obietti per un istraforo di prospettiva, che se gli originali medesimi successivamente ti venisser passando dinanzi agli occhi" (Tesauro 1978 [1654], 331), "as if by miraculous means it shows one thing inside the other... look at several angles from one hole of perspectival lens, as if the originals themselves would pass in front of your eyes" (translation courtesy of Arianna Ciula).

notions of "target" and "source" (Lakoff and Johnson 1980), referring to them in terms of space/domain. This type of analysis considers the entire process of generating metaphorical concepts. I will use it as a basis for looking at the dynamic integration between the "target domain" (in the case of the workshop the discussion on modelling) and "source domains" (aquatic and terrestrial metaphors) by *crossing* their properties. The metaphorical process is in fact multi-directional in that it involves cognitive, conceptual and cultural levels. From the interaction and intersection of different properties and dynamics a new conceptual space is created: a blending space.

2. "Thinking is an Explorative Journey"

> The whole body of science can be viewed as an ocean, which is continuous, and without any interruption or partition, even though men distinguish in it parts, to which they give names for their own use. Furthermore, just as there are unknown seas, or seas which have only been navigated by a few vessels thrown there by mere chance, so too there are sciences of which we have known something only by chance and without any planning (G.W. Leibniz, *De l'usage de l'art des combinaisons*, 1690-1716).

In the spirit of the German philosopher Gottfried Wilhelm Leibniz and his idea of collaborative knowledge (as described in the above quotation), the workshop was navigating in the open sea, aiming to explore the concepts of modelling and model, their different applications, but also their limits: their disciplinary specificities as well as their common ground.

"Thinking is an explorative journey" was the metaphorical frame chosen to guide the workshop discussion. To investigate the different applications of this frame we mainly focused on the interplay of some related metaphors, in particular the ship and the island. To do so, the workshop exercises referred to aquatic, as well as to terrestrial metaphors. These conceptual metaphors are interconnected not only because they share the same semantic field and some properties, but also because they often occur when we talk about research, research investigation, and knowledge organization. In the history of thought they have become models for structuring and mapping knowledge, for the organization of disciplines, and for modelling research practices (Marras 2017, 2014, 2013; Blumenberg 1960; McCarthy 2006). They also vehiculate a particular vision and idea of knowledge organization and acquisition, namely a system in which different types of scholarship (in this context I would use the French word *savoirs*) are seen as an interconnected net rather than as hierarchical or pyramidal structures.

Nowadays, aquatic and maritime metaphors have become integral parts of the lexicon of the digital era. The most obvious examples are seen in the use of maritime metaphors connected to the web, such as surfing and navigation. The assumption behind the workshop's approach of "thinking in practice" is that

metaphors have a cognitive and a conceptual role and that they build, or can guide the building of, models of thinking and of knowledge organization. The properties of these maritime and terrestrial metaphors seem to be adequate for capturing the nature and the characteristics of engaged discussions: fluid, dynamic investigation and confrontation aimed at exploring the surface as well as plumbing the depths. The ship (exercise 1) is supposed to be well organized; navigation has to be made with everyone's contribution (from the chef to the skipper, from the simple sailor to the officers, to the mechanic, etc.); the onboard equipment is crucial and many different things are needed (food, scientific instruments, etc.).

As the workshop was interdisciplinary, the crew included people with different competences, visions, expertise, and experiences. The route for the workshop was plotted but was also adjusted during navigation to cope with all the unforeseen events and the different routes envisaged during the discussion. While sailing (workshop), the crew was invited to find an island and to think about how to populate it, what to bring in, and what to build (exercise 2).

Through the analysis of the use of these metaphors in the workshop debate, once more, not only can metaphor be conceived as a "rhetorical ornament" but, in spite and in virtue of its informal character, it can also function as a methodological and non-conventional way to structure discourse in analogical terms.

3. Exercises

Exercise 1: Ship (time 20′)

Figure 1: The Workshop Ship – Day 1

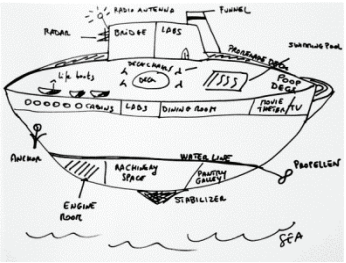
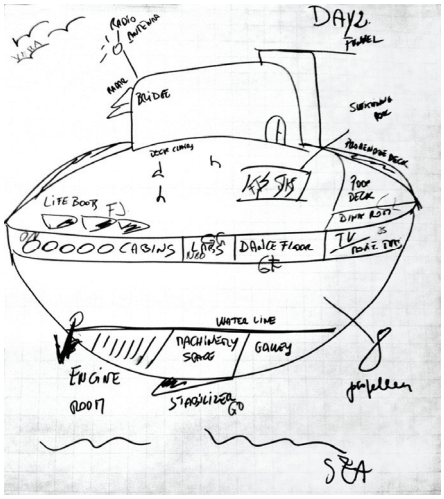


Figure 2: The Workshop Ship – Day 2



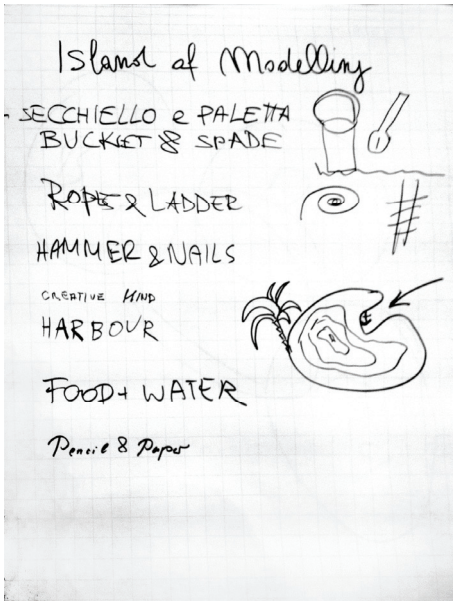
Description

A ship and its parts (detailed) were drawn on a flipchart. Each participant was asked to position him/herself in the ship according to the role he/she thinks he/she will be taking *vis a vis* the topic being discussed. Each participant was asked to briefly describe their reasons for choosing their role. The questions used to guide the exercise were related to those addressed in each participants' presented papers and to the main issues that emerged from the discussion between the pairs of paper presenters.

The "positioning phase" was followed by a brief comment or discussion once all participants had chosen their roles on the ship.

Exercise 2: The Island of Modelling (MetaMaps) (time 30')

Figure 3: Island of Modelling



Description

Somewhere in the Ocean of Knowledge there is the Island of Modelling: a destination for the ship? A place to dock the ship? The boundaries and the shape of this island had to be drawn. The island could be the ship's destination and be populated by its crew. Each participant was therefore asked to imagine the Island of Modelling, and to indicate what should be brought in and what should be built on it (infrastructures, structures, tools, etc.).

Exercise 3: Drag-and-Drop (Suitcase, Night Table, Wastebasket) (time 40')

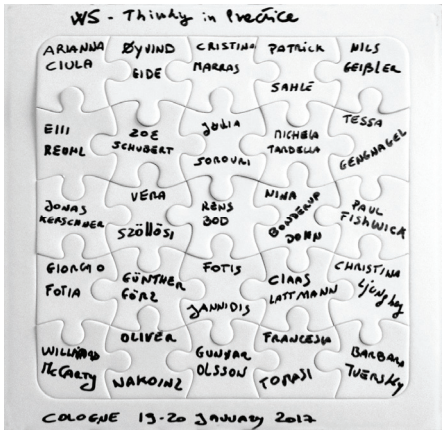
Description

At the end of the workshop each participant was asked to indicate what he/she wanted to bring with them in a suitcase for travel to and life on the Island. They were also asked what they would put on a night table to reread, review, or reflect on, and what they would like to throw away.

The exercise was intended to gather together the most salient elements, concepts, or words that emerged during the two-day workshop, to select what should further be reflected upon and investigated, as well as what was redundant or wasteful in that it did not improve our understanding of and research on modelling.

4. Conclusion

Figure 4: Puzzle



The workshop was an opportunity to experiment with different forms of languages and communication for research and science as part of its main objective to reflect on models and modelling. The conceptual metaphor, "thinking is an explorative journey", guided the discussion and the workshop activities. The purpose was to explore different forms of meta-reflection on modelling using a participatory methodology. Different resources (reading, writing, pictures, games) were used to organize and produce shared knowledge. Participants, who came from different disciplines and research backgrounds, actively and directly contributed, individually or as groups, to the development of different perspectives and shared methodologies and definitions. We wanted to avoid the risk of bring everybody together on the "same" understanding of what modelling is. Therefore, the discussions and the common reflections and analysis stressed the importance to preserve the richness deriving for the disciplinary multiperspectivism of model and modelling.

With these exercises we in fact wanted to address a double methodological principle: transferable criteria and plural practices. Both are tentative answers to some questions the project has been investigating, namely: under which conditions and through which procedures is it possible to reproduce a model in

a different context from the one in which it was originally produced? What distinctive elements should the experience of modelling (for example in a lab) have in order to meet the criteria of transferability?

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