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## **Artists and Scientists**

### **Transareality: travelling between disciplinary and cultural areas**

We will discuss here the relationship between arts & sciences, especially when they shape creatively the work of various figures of the science or art world. Therefore our talk is entitled: “artists & scientists. Transareality: travelling between disciplinary and cultural areas”. Transareality is a notion based on the generalization of Ottmar Ette’s concept of Transarea, that we applied to Humboldt’s work in our paper for the international Humboldt Kolleg *To Grasp The Whole World* held in 2019 at NOVA University in Lisbon. In brief, this notion refers simultaneously to a travel between various cultural areas, but also between various disciplinary areas. We will study here how transareality emerges in different scientists or artists that we have studied during our research.

Art-science relationships – and more generally interdisciplinarity – have been anything but obvious especially in the 20<sup>th</sup> Century, as pointed out by Jean-Marc L evy-Leblond:

*[In the 20<sup>th</sup> Century we] can say that science develops in an almost total indifference towards the artistic movement. And the reciprocal is valid. It is not true on the level of the techniques (...). The 20<sup>th</sup> century remains for the most part, a moment of mutual indifference [in: Art et Science, Les Essentiels d’Herm es, Paris, CNRS Editions, 2012].*

This quotation suggests that the relationships would be better between arts & techniques than between arts & sciences. This is most certainly due to the fact that technologies are likely to open new horizons to the arts.

Two opposite attitudes are emerging: the *inclusive vision*, uniting art and science; the *exclusive vision*, leading to withdrawal into its own field of research. The proponents of “art for art” or “science for science” are therefore exclusive; the proponents of applied science & art – like designers – inclusive.

There would be a link between the involvement in applied disciplines and the implementation of a dialogue between arts and sciences. This connection is certainly due to common objectives beyond art and science, as specific socio-economic projects or global ones, when the planetary stakes tend to impose an enlarged view of knowledge.

Few phenomena fit unilaterally into one of the terms “inclusive” or “exclusive”. Beyond the binary oppositions, two antagonistic ideal-types, corresponding to the exclusive and inclusive visions, can serve as a frame of reference to situate disparate phenomena. The exclusive vision implies a monodisciplinary thinking opposed to transdisciplinarity, in a same way as being oriented on a single discipline contrasts with working across disciplines. Furthermore, the exclusive vision focuses on disciplinary identity, when the inclusive one requires confronting otherness in order to reach a meta-level.

Not only disciplines are instrumental in the case of transreality, but also interculturality. Usually, the intercultural experience is different when referring to nearby countries, whose cultures are relatively well known, than in the case of distant countries, of which people often have only an exoticized image. This distance also appears in the field of interdisciplinarity. Indeed, there is a certain proximity between philosophy and history, even if the methods are not the same: a philosopher can contextualize his concepts within history, while historians refer to philosophy when they wonder about their theoretical tools. This proximity is also palpable between related scientific disciplines, for example physical chemistry and applied physics. But it is very difficult to open an interdisciplinary dialogue in a broader sense of the term, between large disciplinary areas: arts, humanities, sciences...

The term “area” applies here to large regions of the world or large sets of disciplines. Area thinking tends towards stability, whereas cultural and scientific phenomena should be considered in the dynamics of their relationality. The situation is similar between the main areas of knowledge. Connecting cultural and disciplinary areas should be necessary in order to compare views on globalization and to respond to global issues. Beyond “transareal” dynamics, the suffix -ity recalls unifying concepts like Glissant’s “mondiality”, applicable to the state of presence of cultures in the respect of diversity or Spivak’s “planetary” that understands the planet as a unified natural space, a kind of otherness on which we depend.

We will now give some examples of the application of transareality to different scientists or artists that we have studied during our research: Alexander von Humboldt, Olivier Messiaen, and Mildred and William Archer. First of all we give the example of Alexander von Humboldt from which we have forged the notion of transareality. After that, we will briefly show that this concept is applicable to other figures of various disciplines.

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As an Enlightenment scientist, Alexander von Humboldt (1769-1859) was measuring the world: he was convinced that all results can be reduced to numerical relations, and he was proud of his instrument-based scientific approach. He made many inventions and discoveries, e.g. the theory concerning the periodic swarm of meteors, the discovery of the fluvial system Amazon/Orinoco, the law of the decrease in mean temperature with the increase in elevation above the sea-level, the invention of isotherm lines. He also allowed the opening of new research fields as geography of plants, scientific orography or early American studies.

But Humboldt’s vision of cosmos, which was at the origin of ecology, was broader than his scientific approach. His geography is connecting science, cosmopolitics, and geo-poetics: for him, social, economic, and political problems are linked to environmental issues. Concerning his conception of geo-poetics, he was convinced that a book on nature must contain its objective as well as subjective sides; our inner

world is constructed by the impressions that nature provokes in us. Nature is seen as a work of art: he speaks about nature paintings (*Tableaux de la nature*) or music from the rocks... Humboldt was involved in various branches of knowledge and transcended them at the same time. Considering himself as a stranger between disciplines, he managed to be recognized in some of them and even created new ones. The same can be said about his connections with global regions and languages. He became specialized in different cultural areas and learned to think in different languages. He can be considered as a specialist of area studies coming from the natural sciences. But, Humboldt was able to situate these areas into a global panorama. This is the case of his research in the natural sciences, based on a comparative analysis of data from the entire world, but also the contrastive linguistic studies he conducted together with his brother Wilhelm.

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Let's speak now briefly about two figures concerning our respective research.

The composer Olivier Messiaen (1908-1992) can be considered as having traveled between cultural and disciplinary areas. His musical aesthetics is based on very different fields of knowledge, among them: Bergson's philosophy of duration, various scientific theories (expansion of the Universe, microphysics, relativity...), and his experience as an ornithologist. In this later field, he found birdsong fascinating and was notating it worldwide. He incorporated birdsong into his music e.g. in *Oiseaux exotiques*. Some of his artistic innovations that make his music distinctive (relationship between time and music, use of birdsong...) come from his trans-area positioning as well as his interest in South and East Asian music.

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Because of the vastness of their interests, Mildred Archer (1911-2005) and William Archer (1907-1979) are situated halfway between anthropology and art. The rigor of their fieldwork and archival work especially in Bihar brings them closer to anthropology. On the other hand, they are not artists in the strict sense of the word – although William had planned for a while to become a writer – but collectors and

above all art historians committed, in William's case, to Indian modernism. The Archers are thus situated in a third space, allowing them to reconcile the horizon of anthropologists for the preservation of local cultures, and that of the artists of the 'primitivist' Western avant-gardes, drawing inspiration from "folk and tribal" arts to create.

Thanks to their positioning and the scope of their fields of investigation, the Archers achieved an inclusive vision of the arts-anthropology relations at a time when the two terms were hardly reconcilable. They are mediators not only between India and Europe, but also between disciplinary areas (art and anthropology): they are transcultural and transdisciplinary mediators close to the notion of transreality.

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Although it does not always offer the expected recognition to those who practice it, transreality is likely to be instrumental in innovation and creativity. It can be hypothesized that the intensity of innovation is correlated to the degree of interdisciplinarity and interculturality. From this point of view, transreality – applying to more distant disciplines and countries – would be even more capable of favoring breakthrough innovation and paradigm shifts.

In this context, the dialogue between a Senegalese writer, a Canadian philosopher and a Chinese physicist would prove to be fruitful. They rarely meet and when they do, it happens inadvertently. And if they do start a conversation, they must be able to exchange on their respective fields to achieve added value.

It is therefore necessary, in addition to scientific or artistic specializations, to promote an inclusive arts-sciences vision and, more generally, transreality, to generalize them as much as possible to inter-individual and even collective exchanges. This approach seems indispensable today in order to rethink together the planetary stakes.