

# REFLECTIONS TOWARD A PHENOMENOLOGICAL AND METHODOLOGICAL INTERCONNECTEDNESS OF SCIENCE AND ART

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## Abstract

Interaction between object and observer in scientific undertakings is regarded as objective, functional and instrumental; whereas in artistic projects it is usually seen as subjective, imaginatively invested and autonomous. Yet the fact that any research process, be it in science for “utilitarian” purposes, or in the humanities for their “intrinsic worth”, involves investigation from a theoretical viewpoint—and that “theory” implies producing a mental view of an object/event in a subjective albeit comprehensive way—elicits reflections upon phenomenological correspondences between both areas. This paper explores such links, suggesting an alliance between art and science within an ecophilosophical view of Nature/Culture that challenges the still prevalent mechanical paradigm.

## Keywords

Art and science; humanities and science; ecophilosophy; philosophy of science; poetic imagination.

In a recent book, published in 2011, Chinese physicist Lui Lam claims that art is part of science, that it is a SciMat or science matter (Lam, 2011).<sup>1</sup> According to Lam, all quests for knowledge are efforts to understand Nature, both its human and non-human systems, and therefore they all belong to the science domain. Science is the study of Nature, where “Nature consists of everything in the universe—all material systems, humans and nonhumans” (Lam, 2008: 4); consequently, humanities are part of science.<sup>2</sup>

Thus, broadly speaking, all these quests are in the science domain. The methods and tools used may be different; for example, literary people use mainly their bodily sensors and their brain as the information processor, while natural scientists may use, in addition, measuring instruments and computers. (2008: 4)

<sup>1</sup> SciMat was originated by Lam in 2008, as a “new discipline that treats all human-related matters, humanities in particular, as part of Science” (Lui Lam, 2011: 5).

<sup>2</sup> Philosophy, culture, religion, language, literature, art, music, movie and performing arts make up the humanities. History could be part of social science but is usually listed in the humanities. Generally speaking, social science consists of anthropology, business management, economics, education, environmental science, geography, government policy, law, psychology, social welfare, sociology, and women’s studies.

Lam, however, considers that scientific development in the humanities is “at the primitive or empirical level”, since its scholars and researchers only use analytic, critical and speculative methods; social science is at “an intermediate level”; and physical science is at “the highest level” (Lam, 2008: 12).

While we may generally agree that there are no strict boundaries between the diverse fields of investigation of the all-inclusive human quest for knowledge, why not argue instead for science to be included into the sphere of humanities, since it likewise comprises human-dependent disciplines? Indeed, ever since the first century BCE and until the seventeenth century CE, science belonged to the umbrella of Humanities, or to the Liberal Arts, so-called because they were designed to cultivate the knowledge of free men (not slaves) through the study of nine subjects: music, geometry, architecture, astronomy, medicine, grammar, rhetoric, logic and arithmetic (Hoppe, 2011: 40). The word *arts*, rooted in the Latin term *ars* from the Greek *artýō*, referred to the human skill and knowledge of how to arrange, to design, and to build, suggesting that the study and practice of “arts” (of which sciences were a part) was meant to have a practical purpose.

Although science only became a specialized field and autonomous profession in the last 150 years, it started to be gradually divorced from the “arts” ever since the seventeenth century. In effect, with the “mechanical philosophy” initiated by René Descartes a new concept of science emerged: a discipline based on hypotheses and probability, required to report empirical and experimental results through quantitative and statistical methods. Formerly, scientists were considered (and called) “natural philosophers” that wondered about natural phenomena and thus engaged in their study. Significantly, the word science derives from the Latin *scientia*, which in turn is a translation of the Greek term *episteme*, meaning the study of the eternal order of things or the pursuit of universal knowledge. Science was therefore not always developed for practical purposes, since it could consist solely of a theoretical inquiry. As Aristotle held in a work entitled *Metaphysics*, just as a “man is free when he exists for his own sake and not for another’s”, so we pursue “science in order to know, and not for any utilitarian end”; “it is the only free science, for it alone exists for its own sake” (Aristotle: classics.mit.edu). In contrast to such an unlimited and speculative quest for knowledge, the mechanical paradigm of the seventeenth century turned science into a practical and profitable field, steadfastly tied to technological innovation.

As of the mid-twentieth century, especially after WWII, the field of science gained an ascendancy over the arts and humanities. Thus collapsed the German-Romantic model of Art as something sacred that might generate new modes of perception, and thereby possibly change our existential paths and social worlds. Indeed, in our twenty-first century, all the emphasis in education and research has shifted to applied science, or to potential advances in technology in partnership with industry and finance. And in this “brave new world” where humans readily

accept the idea that they are genetically determined, where the increasing chasm between social classes seems scientifically justified by neo-Darwinian theories of the survival of the fittest, and where development is solely equated with GDP growth, it seems that arts and humanities are no longer needed, except when they deliver best sellers and mass entertainment, and thereby generate profit. Ironically, it was a poet by the name of Aldous Huxley who clairvoyantly revealed the dead-end effects of such a world in a dystopian novel published almost a century ago.

I have deliberately called Huxley a poet because I want to bring in to this dialogue between art and science the concept of *poïesis*—a term which is at the root of the word “poetry”, but which in ancient Greek was a verb that meant *creating, producing, transforming*, and therefore referred to all forms of artistic creativity. The concept of the artist as poet was particularly cherished by British and German Romantics at the end of the eighteenth century, and it eventually led to the abandonment of the technical theory of art, therefore to the rejection of the usefulness of art. According to Romantic theory, poet-artists are not just the product of “external influences,” but also particularly endowed with a keen perception of the historical epoch in which they live. Moreover, they are gifted with “internal powers” that make them capable of inventing multi-sensorial worlds that do not, and shall never, exist—thereby empowering the imagining activity of their readers or beholders. Poetic imagination and imagining activity open up utopian spaces; they point to the potential otherness of reality and thus to an endless capacity for change and transformation both at the macro- and micropolitical level. Poetic imagination—free art, non-applied Art, or “fine art”, as it came to be called—may be a form of philosophical and historical action; however, it seldom is economically “useful”.

Perhaps because postmodernist theories challenged the Romantic concept of the subjective empowerment of the artist, and thus the sacred value of Art, we have been witnessing in the western world, since the last decade of the twentieth century, a sharp decline in both public and private funding for research, education and production in arts and humanities.<sup>3</sup> In many doctoral programs in the U.S., for instance, art is being taught at the light of anthropology, sociology, communication technology, and cognitive science. In Europe, the League of European Research Universities has recently drawn up a paper claiming that it is crucial to dote Humanities researchers with funds since “understanding individual and collective human behaviour is necessary” (LERU, 2012). We have reached a point where, in order to justify the intrinsic value and survival of the arts and humanities based on utilitarian and cost-effective reasons, we have reduced them to a matter of understanding and describing human behaviors and events. Astonishingly, it seems that we are neglecting the driving power and mysterious wonder of the “poetic” imagination.

<sup>3</sup> Regarding steep decline of funding for the Arts and Humanities since 2009, see “Trends in Arts and Humanities Funding 2004-2012,” in <http://www.researchtrends.com/issue-32-march-2013/trends-in-arts-humanities-funding-2004-2012>. Accessed 3 January 2013.

Although the arts and humanities have unquestionably much merit in promoting artistic literacy, educational inclusion and cultural memory, they are not always reflective upon, or descriptive of, human nature, nor necessarily concerned with social progress and development. Differently from “normal science”, research in arts and humanities seldom strives to explain anything in a unified way, or to discover the “origins” of phenomena, or to arrive at empirical and statistical evidence of universal truths. Further, in contrast to normative scientific trends that endorse a continuous “progressive” line of human development or “evolution” through technological innovation, the arts and humanities often embrace censored or forgotten pasts, and therefore adhere to a cyclical notion of time. As U.S. literary critic Stanley Fish argues, arts and humanities have only intrinsic worth: they are activities that cannot be justified from a perspective outside of their own performance and thus considered “instrumental to some larger good” because they “are their own good”. According to Fish, “they cannot be justified except in relation to the pleasure they give to those who enjoy them”, and it is definitely not “their business to bring revenue to a state or a university” (Fish, 2008).

Yet, as Chinese philosopher of science Guo-Sheng Wu has pointed out, there is also a branch of science—essentially theoretical—which like *poïesis* or “fine arts” has no direct instrumental purpose (Wu, 2011). I suggest that it is perhaps with this scientific-philosophical field that arts and humanities may best interconnect, both phenomenologically and methodologically. In such areas of scientific inquiry, a research process usually involves the action of contemplating and speculating, from a situational perspective or theoretical viewpoint, an object/event/situation so as to produce a comprehensive, albeit provisional, understanding of it. Thus, in the same manner as researchers of theoretical science borrow from the arts an awareness of their phenomenological situatedness in scientific endeavors, scholarship in the arts may add to its characteristically intuitive and affective approach the elaboration of a theory/perspective, apply it to an object of study, and thereby produce, through qualitative or quantitative methods of analysis, incremental awareness.

Such phenomenological and methodological interconnectedness between Art and Science is apparent in those artists-scientists who—like Leonardo Da Vinci, Giordano Bruno, and Paracelsus—experienced nature as a complex, animate, and sensitive organism, and “viewed the material world, and indeed matter itself, as a locus of subtle powers and immanent forces” (Abram, 1991: 69). Indeed, as French philosophers Gilles Deleuze and Félix Guattari claim, all matter is *autopoietic*, which implies that it holds immanent artistic potentialities, and that there is poetic imagination at work in Nature’s own formations (Deleuze & Guattari, 1987: 342, 542).

In this sense I want to recall Guattari’s concept of a generalized ecology or ecophilosophy, which embraces ecologies not only of corporeal species but also of what he calls “incorporeal species” aesthetically produced by the imaginary, “such



as music, the arts, cinema..." (Guattari, 1995: 119-20). As I have argued elsewhere, such works may "provide a reflection on 'real' experience, as well as evoke a form of 'possible' experience", since by allowing us to discover an unfamiliar world that we have tended to forget they give us back *spaces of being* (Corrêa, 2011: 55-6).

In his proposal that Art be considered a Science matter, Lui Lang equates literary artists—who work with their sensorium and use their brains as "information processors"—to scientists who "additionally" utilize measuring instruments and computers. I suggest that we have to beware of such comparisons between the human mind and a machine—which have become so commonplace in our times—since they likely ensue from the still prevalent Cartesian mechanical view of Nature that separates mind, will, desire, and dream from "body", and that compartmentalizes the brain in autonomous sensory sectors. An alliance between Art and Science should be sought elsewhere and otherwise: within the awareness that we need an unrestricted space of being, imagining, and thinking; within the ecophilosophical understanding that Art is also at work in non-human worlds, and that therefore Art and Science may best interconnect in their common phenomenological wonder at Nature.

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