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Scientific images may also be transgressive. An epistemological approach

(abstract)

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Behind the linguistic dimension of its statements, science has always produced images. From all kinds of diagrammatic procedures to illustrative images, from maps and tables to graphics and pictures, from rudimentary sketches to sophisticated satellite images, from photography to scanning tunnelling microscopic images, science has always produced imagetic devices, each day in a more and more deep relationship. With these images, science has looked for seeing further in three dimensions: 1) the far, the distant, the cosmic; 2) the inside, the internal, the intimate; 3) the small, the minimum, the micro, the nano. Scientific images have served for representing with detail and precision what was observed, for collecting, comparing and systematizing data, for showing, presenting, exposing what was discovered, that is, for communicating scientific results.

Today, with powerful novel techniques, science has not only enormously enlarged the field of the visible but it has made visible the invisible. Through the production of the most astonishing images, science is able to put us face to face to the most remote galaxies, to the inner nano structures of the body and of the universe. Science imagery has overcome the confines of our visibility. It has transgressed the borders of human visibility. But, in doing so, science has encountered huge cognitive problems and unsuspected difficulties. Precisely because recent scientific images give us to see what we could never see other wise, how can we trust the information they provide? How can we rely on their representative significance? Some critique speaks about the end of their truth value. They emphasize their mythical, fictional, artistic or political nature. Is that so?

This paper aims 1) to analyse the several epistemological roles which scientific images may perform; 2) to make explicit the transgressive nature of contemporary scientific images; 3) to discuss the sceptic and relativistic arguments and 4) to point out to a prospective solution by stressing the heuristic and pragmatic role of scientific images.