

## **Rewind, review, reflect and fast forward: from Ethics to GeoEthics.**

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Philosophy has as many definitions as philosophers but, at the end of the day, it is no more and no less than the science of thinking using the reason. It gives us tools for rationalizing, following logical paths and with a critical eye, to understand the material and immaterial substance of the universe. It has many branches, and a couple of them, Ethics and Epistemology, are central for the evolution of the human knowledge, among many others.

Today, at the XXI Century, it seems that the lack of formal and adequate education on such important matters is making the act of “thinking” not so important when compared with the accumulation of “information”, right or wrong, pasteurized or in disconnected pieces, with no much room/time for critical and logical analysis (Philosophy). If the tools to build the knowledge (Epistemology) are not usually familiar to the scientists and, worst, the need of taking the right actions with the generated new and existing knowledge (Ethics) is not a priority; the outputs cannot be the best ones.

There have been several academic works and meetings looking into the causes of the scholarly illiteracy on Ethics and Epistemology in Earth Sciences. Among them, our sessions at EGU have endured showing important aspects that need to be tackled and, particularly, insisting in the fact that it is a continuous effort. However, we still need to go back (Rewind) to the main principles of Philosophy, Epistemology and Ethics, looking at them with care (Review), and think (Reflecting) returning to the present (Fast Forward) to make the world better for future generations.

Geoethics consists of research and reflection on the values that underpin appropriate behaviours and practices, wherever human activities interact with the Earth system. Although more general ethical issues, which affect other/all sciences practices and behaviours, are included among the Geoethic concerns (as plagiarism, harassment, gender equity, etc.), the focus remains at the Human-Earth interactions. That implies in a lot of logical thinking, the use of the reason and the critical eye, founded on the philosophical and scientific knowledge humanity has developed along thousands of years. In the education process, the “training” to think, with logic and reason based, should be given since childhood, respecting all the learning ages and constructing a better human being, truly aware of her/his ethical duties. An ethical behaviour is constructed systematically, not created in one semester course or so, and it is not enough if reduced to following consensual rules (deontology), but it is only true when a mandate of our conscience is the reason that move us, fully convinced by the reason, to walk the right behaviour. Learning to think logically, with the reason and based in the best Earth Sciences knowledge, after arriving at the university will not be, probably, enough. Otherwise, when confronted with ethical dilemmas in the practice of our profession, we will not be truthfully prepared to offer reliable scientific support to society, in a proper ethical way, wherever human activities interact with the Earth system.