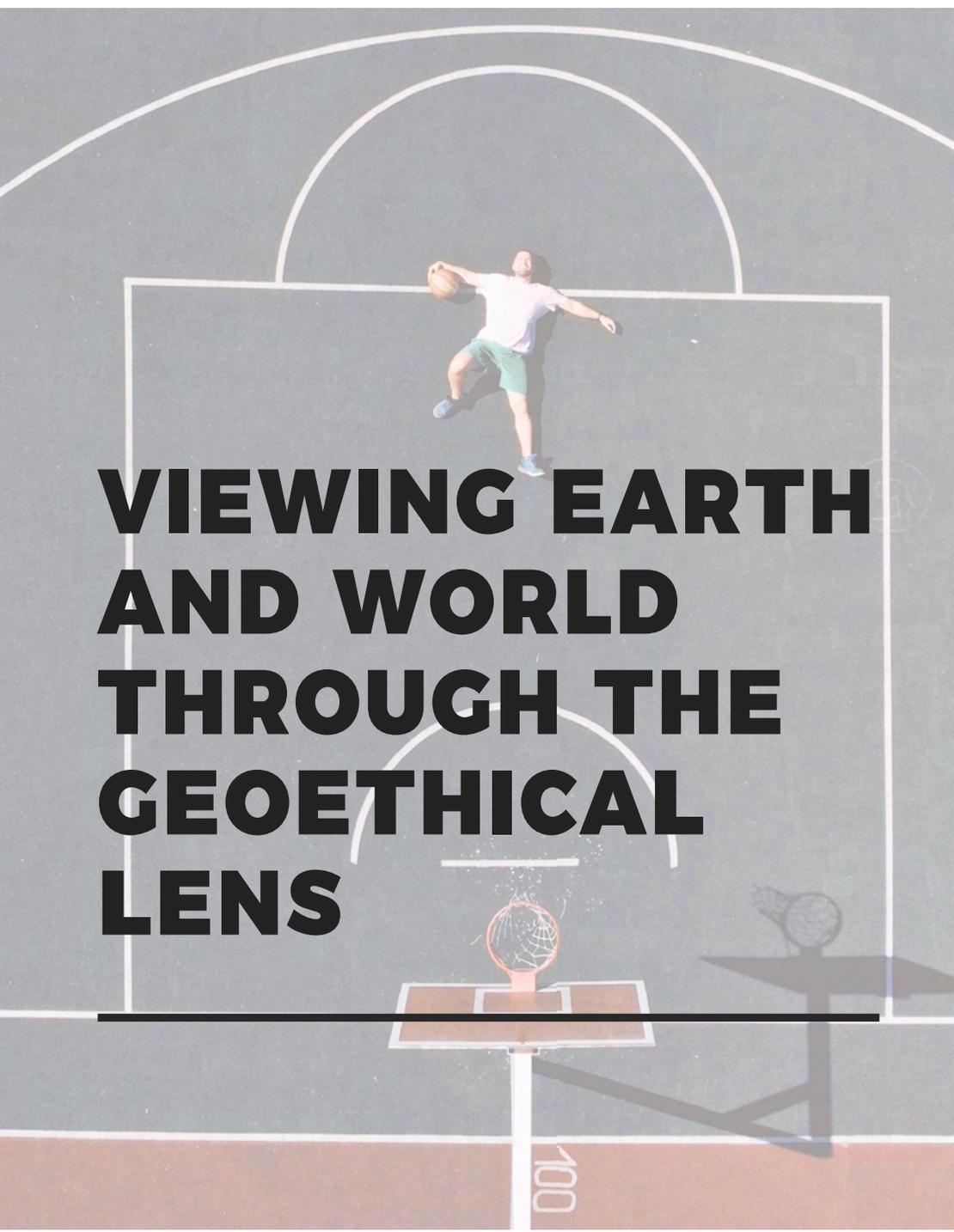


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VIEWING EARTH AND WORLD THROUGH THE GEOETHICAL LENS

The COVID-19 health pandemic challenges human beliefs, superstructures, paradigms. The design of geoethics offers some general ideas on how to respond to the challenges that the COVID-19 Pandemic poses. When considering stakeholder or institutional actors, geoethics is about governance practices that implement commitments like being human agent-centric, virtue-ethics focused, responsibility driven, knowledge-based, stakeholder-inclusive, and universal-rights informed. Overall, better results in the management of the COVID-19 pandemic are found if the conditions for good governance are met, such as being committed to the best available scientific advice and sound ethical practices - as in GeoEthics. But what is Geoethics?

People that study rocks, soils, mountains, rivers, lakes, oceans, glaciers, climate or weather, and many other non-living parts of Earth, are called geoscientists. Their insights are paramount to understand the functioning of planet Earth and how our World works. Hence, rightly, the geoscientists Langmuir and Broecker¹ entitled a book about the evolution of planet Earth, metaphorically, 'How to Build a Habitable Planet'.

Geoscientific knowledge is context-dependent and robust in facing uncertainties. Therefore, it easily seeps into human thinking. Artisans, technicians, architects, or engineers use geoscientific expertise. It is needed to alter natural environments or to create artefacts, such as in mineral extraction, laying the foundation for buildings, or managing

floodplains. Likewise, artists, poets or philosophers of any given time refer to the Earth to reflect on human identity. Exploring the tenets of her profession, the geologist Marcia Bjorneru² illustrates that feature in her book *'Timefulness'*. The subtitle of the book, *'How Thinking like a Geologist can help to save the World'* tells that geoscience expertise is needed in frameworks like the Sustainable Development Goals. However, geoscientific expertise alone does not guide how geoscientists should act, in their capacity as professionals, as citizens, or as a mundane person. That is, why ethics matter. Therefore, geoscientists^{3,4} developed the field of geoethics.

Initially, geoethics was a tool to support professional behaviour of geoscientists. Lately, geoethics has evolved to promote an applied, sense-making tool for the human condition, namely the obligation of *"appropriate behaviours and practices wherever human activities interact with the Earth System"*. Geoethics studies what this commitment implies for individual or collective human agents, because, as the Australian philosopher Clive Hamilton⁵ formulated in his book *'Defiant Earth'*

(p. 150), any citizen should *"be judged... where they fall on a scale of care and neglect"* because *"[w]hen humans formed an independent relation with the Earth, we were left to choose between a path of care and a path of neglect"*.

At a systemic level, the central tenet of geoethical concepts is the individual human agent. Considering the philosophical roots of geoethics, it relates to Kant's categorical imperative formulated in the 19th century, and the challenges that are posed by his three fundamental questions, namely *'what to know, do, and hope?'* However, as Max Weber pointed out at the beginning of the 20th century, Kantian thinking is incomplete because it does not consider the agent's responsibilities. The latter is a further central tenet of geoethics. Towards the end of the 20th century, three philosophers consolidated the foundations on which geoethics can dwell. Hans Jonas added the obligation for actors in technology, science, and innovation to take responsibility for future generations, ensuring that future lives are genuinely human. Mario Augusto Bunge evoked the moral principle that while presenting the right to happiness,

the duty reigns of helping genuinely human and other biological forms of life. Lawrence Kohlberg provided a scale of moral adequacy to gauge human behaviours and practices. Nothing in this philosophical ladder is geoscience-specific. Thus, the underpinning method is systemic. What distinguishes geoethics within ethics? It is the peculiar subject, namely, the intersection of Earth and World in ordinary times and times of global calamities.

High ethical standards, sound scientific support, and good governance are essential aspects of handling the COVID-19 Pandemic that currently stretches our imagination to the breaking point. Only by behaving as [geo]ethical citizens can artists, cultural workers, entrepreneurs, inventors and [geo]scientists go beyond the familiar; hence, moving cooperatively towards a future without fear. When considering stakeholder or institutional agents, geoethics is about governance practices that implement ethical commitments like being human agent-centric, virtue-ethics focused, responsibility-driven, science-knowledge-based, stakeholder-inclusive, and universal-rights-informed.

NOTES:

1. Langmuir, C. & Broecker, W. *How to build a habitable planet?* (Princeton University Press, 2012).
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5. Hamilton, C. *Defiant Earth - The Fate of Humans in the Anthropocene.* (Wiley, Polity Press, 2017).