



Why Geo-Humanities

Robert Casals i Graells (1), Anna Sibilla (2), and Martin Bohle (3)

(1) IMI JU, Brussels, Belgium (robertkasgra@gmail.com), (2) Executive Agency for Small and Medium-sized Enterprises (EASME), Brussels, Belgium (anna.sibilla@ec.europa.eu), (3) Directorate General Research and Innovation, Brussels, Belgium (martin.bohle@ec.europa.eu)

Anthropogenic global change is a composite process. It consists of societal processes (in the 'noosphere') and natural processes (in the 'bio-geosphere'). The 'noosphere' is the ensemble of social, cultural or political insights ('shared subjective mental concepts') of people. Understanding the composite of societal and natural processes ('human geo-biosphere intersections'), which shapes the features of anthropogenic global change, would benefit from a description that draws equally on natural sciences, social sciences and humanities. To that end it is suggested to develop a concept of 'geo-humanities': This essay presents some aspects of its scope, discussing "knowledge that is to manage", "intentions that are to shape", "choices that are to justify" and "complexity that is to handle".

Managing knowledge: That people understand anthropogenic global change requires their insights into how 'human geosphere intersections' function. Insights are formed ('processed') in the noosphere by means of interactions between people. Understanding how 'human geosphere intersections' functions combines scientific, engineering and economic studies with studies of the dynamics of the noosphere.

Shaping intentions: During the last century anthropogenic global change developed as the collateral outcome of humankind's accumulated actions. It is caused by the number of people, the patterns of their consumption of resources, and the alterations of their environments. Nowadays, anthropogenic global change is either an intentional negligence or a conscious act.

Justifying choices: Humanity has alternatives how to alter Earth at planetary scale consciously. For example, there is a choice to alter the geo-biosphere or to adjust the noosphere. Whatever the choice, it will depend on people's world-views, cultures and preferences. Thus beyond issues whether science and technology are 'sound' overarching societal issues are to tackle, such as: (i) how to appropriate and distribute natural resources for what cost, (ii) what are intended collateral effects, or (iii) what is the risk of non-intended collateral effects?

Handling complexity: Consciously altering Earth at a planetary scale is ambitious, although it fits well into the historical development of industrialised societies and their paradigms how to handle change. Still, action at a planetary scale goes beyond any actual use-case that may serve as a reference. Furthermore, the available technological means, scientific understanding and resources impose limits, and, second, the noosphere is complex given the variety of interacting world-views, cultures and preferences.

Summarizing, geo-humanities would study human geosphere intersections. Geo-humanities would address societal and natural process within one frame of reference to understand how attributes of the geo-biosphere and artefacts of the noosphere are aggregated to anthropogenic global change.