

Applied Perspectivism to Foster Interdisciplinarity

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Abstract

Perspectives and Ontologies

Beyond the simplifying opposition between fully constructivist and realistic approaches to science, several alternative have been developed, among which Perspectivism [Giere, 2010] is a way to tackle most of the issues opposing these two by taking an agent-based approach to the production of scientific knowledge.

Applied Perspectivism and Model Coupling

We postulate that this approach to science may be a powerful tool to foster interdisciplinary collaborations, if used in a reflexive way in the construction of projects. More precisely, an “Applied Perspectivism” would imply a high-level of reflexivity for each agent implied, and a mapping of the different layers.

An agent-based Model of Interdisciplinarity

The second part of this paper aims at providing quantitative evidence of the feasibility of the epistemological point of view described above and inform potential implementation for some of its processes. Therefore, we introduce a simple agent-based model of scientific research focusing on the interplay between disciplinary and interdisciplinary research. The rationale relies on the basic assumption that scientists can choose when starting a new project between interdisciplinary collaboration and a work within their discipline.

Agents are N scientists A_i , characterised by a probability distribution $d(x)$ representing their disciplinary positioning in an abstract way. They also have a time budget

Possible extensions

Possible refinements of the model, towards a less stylized and more behavioral and micro-based model, could for example include the introduction of time budgets, simultaneous projects and dynamical time investment for scientists. The assumption of two-person projects is also strongly constraining, and relaxing it would require the extension of depth and interdisciplinarity measures that is not necessary straightforward. Furthermore, the absence of learning when completing a project suggests a short time scale of application.

References

[Giere, 2010] Giere, R. N. (2010). *Scientific perspectivism*. University of Chicago Press, Chicago, ISBN: 9780226292137.