

The two thermodynamic roots of causation: a lesson from pragmatism - Carlo Rovelli

Abstract: I argue that time-orientation of causation is rooted in (and only in) the time arrow of equilibration via two complementary but distinct paths, and we do not fully understand it unless we consider both. First, hypothetical time reversed intervention violates the actual direction of equilibration: this is the "contingent de facto matter which -in David Lewis words- happens to hold in our actual world" underpinning the time orientation of causation. But it is the second path which is the crucial one: the time-oriented physics of equilibration is essential for physical functioning of the subject that deliberates, analyzing future implications of alternative choices. It is in its (namely our) perspective that the abstract embroidery of causal hypotheticals becomes salient. And vice versa, it is the existence of that embroidery that permits the subject to exist hanging on the causal perspective of on an open future. We often better understand the world we face by focusing on ourselves: why and how we organize the world in the way we do. A precious lesson seems to me, from pragmatism.