

Panel proposal

Zeroing in on zero-intelligence: Externalism, automaticity and opacity

This panel explores the notions of zero- and minimal-intelligence at the intersections between philosophy of mind, economics, performance studies and theories of rationality. The first presentation (Petracca) traces the notion of externalism in philosophy of mind and institutional economics. The second (Gallagher) examines two conceptions of zero-intelligence understood in relation to automaticity in the philosophy of performance and institutional economics. The third paper (Mastrogeorgio), using the example of market as an economic institution, argues that opacity can serve as a criterion of minimal-intelligence.

Zero-intelligence in ‘externalist’ new institutional economics

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Extended abstract

Zero-intelligence is a pivotal notion in new institutional economics (hereafter, NIE), although it is not always recognized as such. To have an idea of its centrality, zero-intelligence is implicit in the jargon of institutional economists every time it is said that in certain institutions “[s]tructural constraints, not individuals, do much of the explanatory work” (Hodgson, 2004, p. 438). This paper reconstructs the role of zero-intelligence in NIE, emphasizing in particular how it is at the root of a specific thread that we call ‘externalist’ institutional economics.

Externalism is a philosophical position in cognitive science¹ that maintains that understanding behavior does not require reference to individuals’ mental states and other ‘internalist’ constructs such as beliefs, mental models, expectations, propositional attitudes, and so on. A first way to understand externalism in NIE is to consider it as an alternative to the thread of ‘internalist’ institutional economics, the main theorist of which is John Searle. Searle defines institutions in terms of ‘constitutive rules’, according to which institutions originate in individual acts of normative deliberation which constitute collective beliefs (Searle, 2005). Internalist institutionalism has had large diffusion also beyond Searle, as it provides the foundations to the game-theoretic approach to institutions (see Aoki, 2001). Recently, different internalist approaches have been unified in a common framework (Hindriks & Guala, 2015).

¹ Before its alliance with cognitive science, externalism was mainly intended as a philosophical position on the nature and origins of mental content (see Lau & Deutsch, 2019). In this paper, we consider externalism as a position mainly concerning the extendedness of cognitive systems.

Externalist NIE had its origins in the work of Douglass North and, in particular, in a widely-known paper in which Arthur Denzau and North defined institutions as ‘shared mental models’ (Denzau & North, 1994). The germs of externalism in this view are visible in the idea that mental models – which seem at first distinctly internalist notions – have to be ‘shared’ in order to constitute an institution. In particular, Denzau and North maintain a view on the sharing requirement that is substantially different from Searle’s, as they claim that “individuals with common cultural backgrounds and experiences will share reasonably convergent mental models, ideologies, and institutions; and individuals with different learning experiences (both cultural and environmental) will have different theories (models, ideologies) to interpret their environment” (p. 4). On this view, convergent mental models have a distinctly environmental (i.e., externalist), and not deliberative, origin. Unfortunately, the externalist nature of North’s institutionalism does not go farther than this, and we have to wait until the work of a philosopher of mind, Andy Clark, to take another externalist step. Clark, well known for the influential notion of ‘extended mind’ in the philosophy of mind (Clark & Chalmers, 1998), in the late 1990s made also relevant contributions to NIE as he, explicitly building upon Denzau and North’s insights, introduced the notion of ‘scaffolding institution’ (Clark, 1997). Cognitive scaffolding is strictly related to ‘cognitive offloading’ (e.g. Risko & Gilbert, 2016), as both notions convey the idea that structures external to minds can ease the demands of individuals’ cognition when rightly coupled with them. In the context of institutional theory, scaffolding is what institutions do when they do the cognitive work in place of individuals. It is here that institutional theory becomes structurally connected with zero-intelligence. If it is true that strict institutional constraints lead institutions populated by minimally rational agents to approximate efficiency levels of unconstrained institutions populated by cognitively sophisticated agents (Gode & Sunder, 1993), this is naturally taken as proof not only of the scaffolding mechanism per se but also of its efficiency.

This externalist thread in NIE does not end with the work of North and Clark. Although ‘externalism’ remains a word quite alien to institutional economists, some recent works contribute to advancing the externalist understanding of institutions. Building upon Geoffrey Hodgson’s view that institutions have a ‘cognitive’ function in terms of the information they provide, Dequech (2013) suggests that such a cognitive function goes well beyond information. He emphasizes the ‘profound’ and ‘practical’ cognitive functions of institutions, hinting at the idea that institutions are collective problem-solving mechanisms that crucially rely on tacit forms of knowledge. Moreover, Aoki (2011) conceives of institutions as ‘cognitive media’ emphasizing the role of cognitive artifacts for institutional coordination (for the artefactual nature of economic institutions, and in particular of markets, see also Sunder, 2003).

The latest step in this externalist-inspired thread of institutional theory is represented by the notion of ‘cognitive institution’ (Gallagher et al., 2019; Petracca & Gallagher, 2020), which has its intellectual roots in the ‘socially extended mind’ (Gallagher, 2013). In contrast to Clark and Chalmers’s restricted notion of mind extension, the socially extended mind maintains that institutions can also legitimately be said to extend the mind. On this view, institutions do not just scaffold minds by offloading agents’ cognitive demands; neither do they simply operate as external constraints; rather, they productively constitute cognitive processes. That is, institutions constitute certain reasoning processes that would not be possible without those institutions. The idea of zero-intelligence is partially retained in the framework of cognitive institutions in so far as no internalist construct is required to explain efficient institutional outcomes. In this regard, zero-intelligence is

no longer understood as an assumption about the cognitive capabilities of individuals, but rather as a more general assumption about the unnecessary of internalist constructs to explain institutional outcomes. In particular, rather than thinking of external constraints as the main determinant of institutional outcomes in cognitive institutions, the emphasis falls on the continuous material interaction between agents and external resources.

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