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THE KNOWLEDGE WE HAVE LOST IN INFORMATION – THE HISTORY OF INFORMATION IN MODERN ECONOMICS, by Philip Mirowski and Edward Nik-Khah, Oxford University Press: 2017, pp. 298; ISBN: 9780190270056.

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Fake news, post-truth, alternative facts, the commercialization of science, the wholesale destruction of university library collections in the name of “information access” and “digital first”; what does all this have to do with information economics? What happens to cognition, knowledge, truth, wisdom and understanding in the information economy? What are the vortices of images emerging between the natural and the social sciences that give rise to our understanding of “information”? What understanding of human beings is this based on? Who are the relevant actors, their politics and intellectual projects? Anybody concerned with such questions will benefit from reading the book under review, and these are what this review will focus on.

Mirowski and Nik-Khah present the comprehensive results of their fascinating research on information economics that began as far back as Mirowski’s work on cyborg economics and Nik-Khah’s dissertation and his Kapp Award-winning article on auction design. Their book is intended as a contribution to the recent history of economic thought, written in the style of a spy novel that tries to reconstruct who got us to where we are today and how this could happen. Theirs is a grand story of the Great Transformation of the economics profession into market engineers via modern information economics or market design theory. Spying as a method for historians of economic thought is meant to demonstrate these developments and to provide an alternative to performativity theory, which is deemed too vague to be able to account for the details of the interplay of material and intellectual factors. The book is structured into 17 chapters, some of which are as concise as six pages. The first two chapters set the scene and illustrate that there is something rotten about our understanding of the history and state of information economics. The core chapters deal with the roles of natural science, the Nobels and Neoliberals, the Socialist Calculation Debate, Hayek’s economics, Market Socialists at the Cowles Commission, the three schools of market design, two recent case studies, and a concluding chapter on artificial ignorance.

K. William Kapp once expressed his fundamental view that the dehumanization of economic theory and social reality are related and spring from an erroneous understanding of human beings. (Kapp 1985) So, what concept and understanding of human beings are at the base of information economics? (Though not FBI agents, information economists conventionally refer to human beings as “agents” which seems suitable to a spy novel.) The authors convincingly demonstrate, in particular in chapter 9, that information economists basically assume the irrelevancy of cognition and preferences of agents for the desired market outcome they are paid to design. This essentially means that information economists adopt a self-image of being smarter than people and being able to design mechanisms that extract the information from the agents that they are unaware of possessing. It seems that the quicksand of double truths inherent

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in this assumption remains hidden from their purview. They seem to have no trouble assuming that somehow all the limitations that apply to the agents of their models do not apply to themselves.

This goes back to similar double truths in the works of the intellectual behind the foundational ideas of information economics, i.e. Friedrich von Hayek, who denied people the ability to reason about society as a whole, while he reserved this right and ability to himself. Several chapters describe how the mature Hayek believed that people's cognition can be disregarded as it does not matter for the operation of the market, which is conceived as an information processor (cyborg, machine, computer) more powerful than any human being. Furthermore, according to Hayek the market arguably expands into the realm of non-knowledge, i.e. the unknown unknown, that is subject to evolutionary forces and not within human conscious control. Success and failure in the market thus depend on one's inheritance of unknown unknowns. The best one can hope for is that the market sheds light onto one's own total darkness in a way that it becomes marketable. In this tradition, market designers claim to be able to design markets that extract information from people's unknown unknown, that is, to get agents to give up information they hold. Mirowski and Nik-Khah conclude that in this information economy the market no longer gives people what they want but people have to give the market what it wants (cf. the final chapter). While this seems to suggest that the inside of human beings somehow matters for the establishment of Truth, this is secondary to the overriding claim that the Market is the seat and arbiter of Truth. Truth is thus turned into a function of the unequal and arbitrary distribution of the ability to pay (what prevents the top 1% from buying Truth?).

Mirowski and Nik-Khah judge the essence of these views as pure Social Darwinism with a strong dose of predestination. (p. 69) Along with the authors I think that the mature Hayek's grave error was to deny human beings to be the seat of the kind of Truth that is revealed as a gift from introspection, that is, self-knowledge that enables self-cultivation. Hayek's highly problematic understanding of human beings is compounded by a problematic that Tony Lawson has recently pointed to in an interview (Lawson 2018). That is, Hayek denied the existence of bio-physical human needs that are objectifiable, such that their satisfaction can be planned in a social provisioning process. Otto von Neurath, Max Weber, K.W. Kapp and K. Polanyi called this material or substantive rationality.

This clash of views goes back to the Socialist Calculation Debate, which Mirowski and Nik-Kah identify as the birthplace of information economics (chapter 5). It is the great achievement of this book to have pointed out the seminal importance of this debate for understanding economics today. Unfortunately, the book does not mention the "lost" Neurath-wing of the Socialist Calculation Debate and only focuses on the Cowles men's enthusiasm for a cybernetic socialism. According to the present book it was the market socialists following Oskar Lange's argument that developed information economics at the Cowles Commission. The authors support their main thesis with plenty of evidence that the market socialists "lost track of their political argument and deep motivations" and were haunted by Hayek to end up as neoliberals who sell themselves as experts in market design. This raises the question as to the reasons for the odyssey of Walrasian market socialists following Oskar Lange's intellectual project.

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I believe the answer should be sought partly in their scientific and reductionist conceptualization of information (initially based on Shannon), the acceptance of neoclassical ontology, and their erroneous understanding of human beings. The Walrasian auction and algorithmic understanding of markets lacks an understanding of institutions and the bio-physical dimension of the economic process. This indeed demarcates the difference to the other wing of the Socialist Calculation Debate, that is Otto von Neurath's proposal of economic account in terms of natural units and the integration of knowledge. Neurath's program did not seek to reduce the economic process to some kind of single unit, such as "information" or "utils". Neurath's program was further developed by K. William Kapp and Nicholas Georgescu-Roegen to properly take account of the bio-physical dimension of the economy, i.e. the entropic degradation of the environment, the resulting ecological distribution conflicts and the lacking social rationality of markets (cost shifting). These ideas now find a home within Ecological and Institutional Economics and never ran the risk of ending up in a neoliberal or cybernetic understanding of markets. In this context it would be highly instructive to revisit Georgescu-Roegen's rejection of Shannon's definition of entropy (Georgescu-Roegen 1971), and Kapp's rejection of cybernetics. (Kapp n/d)

One question for future research is how information economists deal with and conceptualize the problem of social costs, which was one of the key issues in the Socialist Calculation Debate (Berger 2017). Are social costs or "market failure" merely defined as asymmetric information as per Kenneth Arrow? Then how would this be consistent with the mature Hayek's view on social costs and those of other neoliberals such as Ludwig von Mises, George Stigler and Ronald Coase?

The present history of information economics evidences the power of ideas and political movements that fit with the larger cultural and technological currents, and dispels technological determinism. However, in this case it seems to have been the market socialists at the Cowles Commission that promoted a cause that was not their own, i.e. neoliberalism. Next to Mirowski's previous sociologies and histories of neoliberals as puppet-masters this adds a delicate ingredient to his story of how we arrived at today's neoliberal world with more than a little help from our cyborg-socialist friends.

It is the great merit of this historical research to trace how this intellectual project spectacularly adjusted its understanding of agent epistemology based on its conceptualization of information: as information became defined increasingly computationally agents' cognition was increasingly defined as irrelevant. (pp. 153, 159) This means first of all that trends in the sciences (in this case computer science) that gel well with larger cultural currents lead to transformations within the vortex of "information" images that govern economics and that are truly natural-social. Secondly, this means that the increasing computational definition of information, a scientific understanding of markets and the market designer's claim to be epistemically privileged was bought at the price of conceptualizing human beings as ignorant. This is the intellectual project of creating "artificial ignorance" expressed in the title: the knowledge we have lost in information. The authors make clear that what is at stake in denying human beings the ability to reason for themselves, to foster wisdom and attain self-knowledge is nothing less than the debasement of freedom in the name of freedom to choose. It would be

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interesting to think through the convergence of this project with “agnotology” (the science of the creation of doubt), which Mirowski has identified to be at the core of neoliberalism a la Hayek. (Mirowski 2013)

While information economists seem confident that knowledge itself is now brought under their control it is my impression after reading this history that there is great confusion among them as to what cognition, truth, knowledge, and wisdom are and how they are related to and can be distinguished from information (for examples see pp. 41-2). I believe that the reason for this confusion is what the authors identify as a “contempt for philosophy” in these “engineers of the human soul.” (p. 237) Although the present account sneers several times at postmodernism’s lack of success for its “anything goes” philosophy, this is precisely the impression I am left with regarding information economics where pretty much anything goes with regard to the interchangeable usage of terms such as information and knowledge. As demonstrated by the chapter on Nobels and Neoliberals, however, conceptual confusion is no impediment for the reception of the Bank of Sweden Prize (cf. the case of Kenneth Arrow).

Anyone who feels they still lack a clear understanding of what is at stake in selling out knowledge for information should turn to Walter Benjamin’s prescient warning that information poses a threat to wisdom, Truth, and the experiential validity of story-telling: “The value of information does not survive the moment in which it was new. It lives only at that moment; it has to surrender to it completely and explain itself to it without losing any time. A story is different. It does not expend itself. It preserves and concentrates its strength and is capable of releasing it even after a long time.” (Benjamin 1968) Perhaps Mirowski and Nik-Khah have something like this ontological difference in mind when they opt for introducing their final chapter on “Artificial Ignorance” with W.H. Auden’s poem “Under Which Lyre”. If this is the case, this would raise the interesting question of what role poetry or poetic intellection play within economics. (For a discussion of the potential of poetic economics see Berger 2015.)

Yet another double truth inherent in the intellectual project of market designers is that it is aware of its normativity (p. 255; fn. 24) in that it claims to bring the market to “optimality” and that efficiency can be redefined based on information. But, this does not say for whom the mechanism is optimal and efficient. The esoteric truth of market designers is that they construct mechanisms that differ depending on the interests of those who hire them. The process is far from transparent, typically serves the vested interests of large corporations (as the case studies of chs. 15/16 demonstrate), and is ingeniously covered up by a rhetoric of substituting “the Market” for a supposedly unwieldy State bureaucracy.

As for the limitations of this otherwise superb history, I would point to chapter ten and its history of markets in economics and the struggle over what a market is. Reading this chapter one could get the impression that information economists were the first to reject thinking of the market as a universal structure and to think of markets as varieties whose structures and mechanics can be more or less complex depending on the context. The chapter says that since the 1980s the profession converged on the constructivist view of markets, which is summarized as “from mechanism to market design”. This is a bit symptomatic of the language of the entire

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book that speaks of “economists” and “the economics profession” with reference to the various schools of information economists. Not mentioning other schools of economic thought, such as Institutional Economics is of course no innocent oversight as both authors are well versed in the history of the institutional movement. So it must be intentional and I am not sure whether it makes sense to present information economists, i.e. market designers, and mechanism designers as if they emerged in an intellectual space void of institutional economics. If there is a weakness it is perhaps that the book does not trace potential influences and antecedents from institutional economics, which viewed markets as varieties of structures that depend on how they are institutionally embedded while taking power, social and environmental justice, as well as the integration of knowledge more seriously. This would lead to the interesting question of why information economics could be so much more successful compared to institutional economics with its approach to social-democratically controlling the economic process with a deliberation of socio-ecological goals.

And, readers beware: The text, in particular the first chapter, is written in the usual Mirowski-esque style and it helps to have a dictionary at hand! Stylistically the topography of many sentences is an over-burdening landscape that at times unnecessarily distracts from the flow of the intellectual argument intended by the text. I found myself marvelling at the pyro-techniques of individual sentences several times wondering what they are trying to say and whether these ideas could have been expressed in a more accessible way so as to not interrupt the flow of the thought process. Compared to Mirowski’s previous “Never Let a Crisis go to Waste” (2013) my reading experience was less enjoyable and more cumbersome. At times the text - in particular chapter 1 - comes across as a bit haughty, which may put off some readers.

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