



What Can Economists Learn from Isabelle Stengers?

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Abstract

Isabelle Stengers' thinking is sensitive, limpid, and complex. Her vision of living worlds is based on the philosophy of becoming and multiplicity. Becoming refers to a living change and therefore to an absence of permanence and natural laws to which we must adapt. Multiplicity refers to several regimes of truth, several types of reason, several modes of existence. Her knowledge universe is made up of several sets of beings and things where thought navigates fluidly between the fields of study. A torrent of freedom that opens up new avenues for overcoming confinement and expanding action. This exploration of the ecology of practices provides the opportunity to address economic life, beyond the confines of academic discipline, as an open field that should be constantly widened through investigation by establishing the conditions of existence.

Keywords: Philosophy; Science; Ecology of Practices; Modes of Existence; Isabelle Stengers

Introduction

Isabelle Stengers, a Belgian philosopher born in 1949 and professor emeritus at the Université libre de Bruxelles, likes to meet people from all walks of life to help her better understand what a science is not from the point of view of its results but through its practices. This led her to take an interest in the plurality of ways of doing science and not only in the natural sciences, headed by physics. My encounter with the philosopher took place during the preparation of my PhD thesis [1] through the reading of her book 'Scientific Concepts' [2]. Since this happy discovery, I have not stopped following her writings, interviews (written, audio or video), conferences, articles, translations, and prefaces. "*I have become what I have become through living encounters and a lot through reading*", she recently declared [3]. Through her living encounters, it is worth mentioning Ilya Prigogine, Michel Serres, Bruno Latour, Leon Chertok, Tobie Nathan, Donna Haraway. Among her most notable readings, Gilles

Deleuze, Michel Foucault, Alfred North Whitehead, Starhawk, Étienne Souriau, Anna Tsing, Marisol de la Cadena.

The purpose of this article, which was close to my heart, is to invite economists to read the work of Isabelle Stengers, which encourages us to apprehend modern science as one practice among others, i.e. to think about science through its milieu, which allows, encourages, admits, and anticipates. In other words, to think of science as something living that brings joy by avoiding creating a hierarchy between knowledge, to describe each knowledge in its conditions of possibility, without falling into the trap of flat relativity that leads one to believe that all knowledge is equal. Moreover, the term new alliance [4] expresses the idea that physics could say something other than the monotonous repetition of the laws of nature [5] while respecting other knowledge practices. Learning with others by constantly arranging questions to raise more relevant questions is the challenge.

In the landscape of the philosophy of scientific cultures, Isabelle Stengers pursues the creation of an unprecedented device of thought questioning the ways of doing science by shedding light on areas of ignorance, the invention of an ecology of practices activating knowledge of people in living environments. From her first works with Prigogine to her essays on Whitehead, from the invention of modern sciences in the time of catastrophes, from the resistance to barbarism that comes, in her works with Chertok, Nathan, Pignarre, Despret, alongside Latour, Haraway, Starhawk, Tsing, de la Cadena, she has never ceased to offer story telling capable of making other possibilities exist, in a quest to know which breaks with resignation and fatalism.

Knowledge Production between Invention and Power

Drawing inspiration from the work of Étienne Souriau on different modes of existence and Bruno Latour on laboratory life, Isabelle Stengers brings the modern construction of reality into play. Far from being the creation of a unique device through a research protocol, the modern creation of reality is the result of multiple, intertwined practices. By analyzing their coherence, their legitimacy, their requirements and what obliges them, Isabelle Stengers approaches the production of knowledge under the tension of invention and power.

Invention, insofar as the activity of knowledge is first and foremost a producer of meaning through the prism of philology as the art of reading well, a creation that is constantly re-launched with deeper questions by navigating between two languages, between the visible and the invisible, which opens up new possibilities for relating, for making new connections. Power, insofar as this inventive creativity creates ever more intense and extensive relations of domination over nature under the effect of the Cartesian heritage and consequently over human societies, given that a society is nothing more than a sum or aggregation of individuals in reference to the Cartesian cogito: 'I think therefore I am'.

This perspective on the production of knowledge between invention and power leads Isabelle Stengers to essential questions that she never ceases to explore in her lectures, conferences, debates, and writings: How can we talk about the inventive power of the sciences without this power turning into a justification of its power? How can we say that the sciences do not respect the facts and yet they are not doomed to the unilateral position of the judge who does not learn what is useful to life but requires the answers within the techno-scientific system? How can we learn to talk about science without ratifying the claims of those who speak 'in the name of science', the positive science made of laws that

takes physics as a model to be imitated?

From Reductionism to Deep Analysis that Make Data Speak

These questions do not aim to deny the production of knowledge as such, but to encourage complex thinking by learning to say for example: It is not as simple as we think, it is not as easy as that, it is more complicated than we can imagine, it is more complicated than that. Learning that it is more complicated than we think and imagine is learning amazing as it may sound. This has the merit of avoiding pretending to say in a reductionist way: 'I understood everything'. This opens the field to analytics, which admits that analysis can be partial and biased.

Hence the importance of master programs like economic analysis, economic analysis and policy, analysis and policy in economics, economics and policy analysis which focus on transition processes (socio-economic, ecological, digital) with a pluralist approach in economics and interdisciplinary perspectives. This means that in terms of data analysis, the relationships between variables are not as obvious as we think and that the variables interact with ecosystems that are difficult to quantify and therefore cannot be included as inputs into economic models chosen. In the world of deep data analysis, saying that it is more complicated does not mean that we do not understand but on the contrary that we have learned to see better, to link the visible to the invisible. As Maurice Merleau-Ponty notes: "*Seeing is in principle seeing more than you see*" [6].

With the increasingly large flows of available data that is commonly referred to as big data, having a clear view of 'what is' becoming more than a priority to deepen the understanding of the worlds around us where interact humans, animals, plants, things of all kinds, in particular technical objects. Economists usually look at the economic data in their possession and try to find out how they relate to each other. Are they moving in the same direction, in opposite directions, or are they unrelated? They must now learn to make the data speak beyond the fact of understanding and making people understand, as is the case in business intelligence.

Saying 'it is more complicated' or 'it depends on the case', allows us to learn to see better because under the prism of the positive approach to formulating laws all cases seem similar. As a result, very small differences begin to appear significant. The distinction between small data and big data falls apart and the sand-pile model takes on its full meaning [7]. It is not a conquest against something, but a sharpening of the sight to see more than we see before. Refinement leads to asking questions no one cares about and to opening up to

others beyond any modernist pretensions 'Us and Them' [8].

From Science to Knowledge Practices

The overcoming of 'Us and the Others', and therefore of modernity and positivism, opens the field to the exploration of destroyed practices which require to be thought of beyond science and philosophy which is a way of thinking. This opens the field to the exploration of modes of existence beyond the formulation of natural laws [9,10]. In other words, living your life instead of the obsession with how to be successful in life and not to be trapped by language which induces a state of passivity under the effect of the power of fascination and bewitchment [11].

This is why Isabelle Stengers increasingly speaks of knowledge rather than science. The notion of science is only justified in the academic disciplinary context. When it comes to transdisciplinary investigation, she prefers the term knowledge. This is important for the connection of knowledge, and the difference between scientists and non-scientists can become a poison. It is not a question of opposing true and false but of exploring the relevance of knowledge to a problem. This is why she speaks of an ecology of practices in the sense that no practice aims to negate other practices [12].

Through the concept of the ecology of practices, Isabelle Stengers relies on a permeability between disciplines understood as collective of practices. It is a call for reflection on disciplinary junctions and on the rich potential of applied interdisciplinarity, even transdisciplinarity, to generate new places of knowledge finds an echo according to different variations of the research group understood no longer as an entity acting as a satellite to the production of knowledge but as a creation within manifestations and events of various sizes.

An Inquiry into Modes of Existence

Through the exchange with Bruno Latour concerning the hypothesis that 'We have never been modern' [13], Isabelle Stengers leans towards the idea that the development of science and technology would have involved us in increasingly more intimate between humans, living beings and things. A feeling that stands out from the story of the Moderns increasingly emancipating themselves from nature, even from the end of the biological body, as some Silicon Valley transhumanists claim.

In this context, we must accept that there are several regimes of truth, several types of reason, several modes of existence whose conditions of possibility must be carefully established through field investigation [14]. This opens the

field to the exploration of practices that take place but that cannot be formalized by reasoning, argumentation, and mathematical logic in the sense of Euclid. It is not possible to explain everything and anything in a discursive way. It allows to cultivate the effects of practices rather than making them the result of a well-following method.

Rather than holding a discourse on epistemology such as the philosophy of science and the resulting dichotomies of the 'objective/subjective' type, Isabelle Stengers encourages us to look at what is useful in life by addressing practices as much in depending on the knowledge necessary for the activity than on the skills to be developed. It is a question of taking the practices of knowledge in their respective milieu (Umwelt, fūdo) without reducing them to 'It Is Like That!' by constantly cultivating 'Yes! But'.

The authority claimed by the scientist depends on the environment in which his activity is carried out, making him seem more intelligent than he really is. Scientific practices only exist through milieus that give scientists an overvalued value and an exaggerated importance. This overestimation leads, according to Isabelle Stengers, to the creation of people who seem both competent and stupid to the researcher who associates scientific practices with their milieu of existence and power. Competent in technical engineering relating to the process of identifying and implementing solutions claiming to solve a problem. Stupid in the way of justifying the relevance of the proposed solutions without shedding light on the conditions of possibility [15].

The Invention of Modern Sciences

In his book 'The Pasteurization of France', Latour [16] supports the idea that science has shaped society. Through the discovery of microbes in the 1870s, Louis Pasteur invented a new conception of society. He appears, in the details of his work on microbes, as a remarkable sociologist and as a fine politician since he manages to add microbes to the social body.

According to Isabelle Stengers, if science exists it is because there is a kind of tacit agreement between colleagues who must verify that their conception of science dominates and curses the one who tries to appeal to an external authority to short-circuit imposed domination and acquired advantages. In sum, science is a social practice, but the fact that their conception dominates and holds is what binds scientists together [17].

It is not about the triumph of rationality over myth, but about what people do and what makes them do this and not that. Because rationality has always been constructed by contesting the relationships of authority and the dominant

modes of legitimation. For Isabelle Stengers, the current powerlessness in the face of the changes imposed by the formidable power of techno-science is not inevitable: other visions of science are possible [18].

This journey of Isabelle Stengers intersects with the notion of a scientific mode of being, which conveys both a way of feeling things, a style of writing and a way of living [19-21]. In other words, faced with the closed system induced by technoscience which submits knowledge to calculation, how to reconstruct peaceful places and open up possibilities by creating other stories? This opens the field to the exploration of other ways of seeing, doing, saying, and learning. It is a question of looking on the side of what has been ignored, of what has never agreed with the linearity of progress and the horizontality of causation [22].

Learn to Live in Trouble through Refined Questioning

Through her writings which span more than four decades, Isabelle Stengers invites us to learn with tact through a fine appreciation of phenomena, constantly telling ourselves that it is not as easy as it might seem at first sight. It is necessary to go beyond the vision of a great universal science, objective and autonomous in relation to the social milieu. It is only by considering science as a space where we confront and negotiate plural practices that we will be even to advance knowledge that will be useful to people's lives.

Plurality is synonymous with openness and exploration of new possibilities through investigations that refine by constantly exploring questions that no one is interested in. It's about learning to escape the obvious, to live in trouble without the security of mathematical models and artificial intelligence algorithms, to pay attention to the 'therefore', to the pitfalls of logical reasoning. The logic is poor, the world is entangled, articulated, interdependent.

One of the dramas of Europe since the 19th century, notes Isabelle Stengers, is to have created ruts of perception that have truncated the world and anesthetized the imagination. We focus on the technical questioning of engineering and we neglect the deep questioning, the fact of perceiving and posing the problems differently. In sum, the sophistication of the technical solution comes at the expense of the depth of the problematization by posing the problems in a refined manner.

In 'Civilizing Modernity? Whitehead and the Ruminations of Common Sense' [23], she takes over from the philosopher, Alfred North Whitehead, when, diagnosing the 'decline of modern civilization', he assigned philosophy the task of 'welding common sense' with imagination. It is through this

process that a creative becoming can be revealed. Within us and outside us, nothing is fixed, immobile, lasting. She also believes that the untaught, the rebellious, the unformed, are demonized through expressions such as 'what you say is philosophy', 'what you say is literature' [24].

Innovate Ways of Living that Add to the Others without Disqualifying

In her book 'Cosmopolitics', Isabelle Stengers looks at the passion of scientists and the positive constructive dimension of this passion. In all cases, it is a matter of creating thought and a practical relationship to things that makes them studyable in scientific terms. However, the discordant character of the landscape is still evident. Scientists seem systematically tempted by hierarchical descriptions. They define what is outside their discipline in terms of terrain to be conquered and consider those who inhabit it to be illegitimate. Kind of retarded non-scientists, even real charlatans.

This haughty attitude contrasts with the actual history of the sciences. Thus, when a science creates fruitful proposals, it is generally not by chasing the occupants of this elsewhere, but on the contrary by passing because they have already learned in their field and by succeeding in producing a relevant proposal. Contempt and arrogance are a way of presenting themselves rather than something inherent in the dynamics of the sciences, their extension or their alliance. So-called modern practices most often present themselves as disqualifying either their environment or their own past.

Modern science has an unprecedented opportunity to connect the production of knowledge with the creation of new practical possibilities, raising new questions and connections. An ecology of knowledge practices would be a project that considers the existing links, modifies them, and tries to create a situation of peace where war -i.e. contempt and arrogance- is the usual solution proposed.

Beware of the Watchword and the Laziness of Thought

The peace to which Isabelle Stengers aspires is a peace that distrusts both the word of command and the laziness of thought. It is in this sense that she has built, through her book 'Cosmopolitics', the project of an ecology of practices. The term 'cosmos' is used in the sense of what can unite, of a common world to be built without abandoning our passions and our singularities. Physicists believe that nature belongs to them since they decipher its laws through the horizontal causation inherited from Newtonian mechanics. But the cosmos appears to be beyond the reach of physical cosmology.

In 'cosmos' there is the ambition to approach the study of phenomena from the point of view of peace between the practices of knowledge as possible and no longer from the point of view of war between the sciences as plausible. According to Isabelle Stengers, if we want to detach modern thought from the old opposition between reason and opinion, we must take seriously the fact that we make things that then make us. Hence her preference to use the notion of 'cosmos' rather than that of 'nature' because it is a problematic disparate, without pre-existing hierarchy or will to power. It is a question of freeing ourselves from the conceptual framework of physics, a science of laws that has verified the motto 'obey nature to subdue it'. With some transhumanists, it is rather a question of neutralizing nature.

Through the notion of peace between the practices of knowledge and the war of sciences, Isabelle Stengers encourages us to work on the states of affairs if we want peace to be a possibility in itself. It is a question of inventing modes of existence and not of speculating around an axiomatization like that which has been done for physics around supposedly immutable laws. This would mean giving in to the mirror game of constructing an identity in opposition to a model. The construction and invention of the possible creates a story telling that is linked to other story telling. People who think that peace could be possible and desirable, are potential bearers of a 'we'. The dominant state of things is war, the destruction of the other, his humiliation, his submission. The possible is basically something that probably characterizes humans in their own right. They have the freedom to make the possible one of the decisive ingredients of the story.

This possible makes the difference between the language we will use if we were attached to the state of things that determines us, and the interest in what this state of things could become if we open ourselves to other forms of language to formulate differently what engages us through, for example, the fragment, the aphorism, the haiku (俳句). The possible does not guarantee us anything, but it substantially modifies our way of expressing what we feel and what we know by introducing a reference to what we do not feel and what we do not know. Economists have an interest in cultivating this aspiration to the possible if they want to free themselves from the unbearable tolerance of those who claim to 'know' towards those who -they say- 'believe' [25].

A World of Many Worlds

Reading 'Earth Beings' by Marisol de la Cadena [26] allows Isabelle Stengers to refine her exploration of the philosophy of knowledge practices. Concerned with the mutual entanglement of indigenous and non-indigenous worlds and the partial relationships that unite them, Marisol de la

Cadena shows how indigenous ways of knowing and living include and transcend modern and non-modern practices. Its discussion pushes us to think about communication that accepts incommensurability and mutual difference as conditions for living together. Incommensurability is the fact that two realities are different in nature. Difference is a set of characteristics that distinguish one reality from another.

In a collective work entitled 'A World of Many Worlds' edited by Marisol de la Cadena and Mario Blaser [27] Isabelle Stengers contributes to the exploration of the possibilities that can emerge from conversations between indigenous collectives and studies in the philosophy of knowledge practices. The authors explore how different knowledge and practices create a cosmos made up of worlds that need not become the same. The common does not require the negation of singularities and differences.

When common sense becomes the enemy of science, the world is impoverished, and the imagination disappears. This could be the role of the philosophy of knowledge practices as developed by Isabelle Stengers: weld common sense to the imagination, reactivate it, civilize a science that confuses its successes with the fulfilment of human destiny. In a world that has become strewn with troubles of all kinds, no authority has the power to arbitrate, learning to make common sense becomes vital for safeguarding the abundance and diversity of life on Earth [28].

Conclusion

In accompanying Isabelle Stengers for about a quarter of a century, I have felt the presence of the woman philosopher rather than the philosopher woman, just as with Gilles Deleuze [29] and Umberto Eco [30] I felt the presence of the man philosopher rather than the philosopher man. The three authors have this in common: "*to honor people's intelligence and their taste for intrigue; they must be intrigued in order to be interested*" [31]. By taking people for idiots, scientists themselves become idiots. This paradox invites us to meditate Dostoevsky's novel 'The Idiot' under a new look. We must learn to situate what matters to us in a situation where other things matter to others. In other words, we must learn to think with others and not for others on a pedestal, believing that we have infused science.

The seasoned economist will have understood that during this fascinating journey with Isabelle Stengers my aim was not to obtain answers to economic questions, nor solutions to economic problems, although she understood that the engine of current growth was indebtedness [32], but to deepen the study of the modes of construction of knowledge practices, first and foremost economics which wants to be and asserts itself more scientific, closer to the

exact sciences than its sisters, the other social sciences. Hence the importance of deep reading which is nourished by philology and surfing between languages to neutralize Heraclitus's problem, i.e. the existence of a gap between what we feel and what we express when we use a language.

Deep reading is an adventure at the risk of the other, it only makes sense if we emerge modified, disturbed, reactivated. It makes us understand that the role of science is to push to ask relevant questions so that one question calls for another more profound question that no one pays attention to. It also makes us understand that science does not consist in applying a method, however important it may be. The art of reading well leads to the exploration of ways of practicing knowledge that are additional to others without disqualifying.

The philosophy of economics, which remains trapped in a technical discourse generally polarized between the notions of epistemology and ontology, has every interest in taking an interest in the work of Isabelle Stengers to think about science not from the point of view of its results but from that of knowledge practices in their respective milieus so that quality is not an emergent property of quantity.

More explicitly, the work of the Belgian philosopher opens the field to possibilities of bifurcation to overcome the polarization between epistemology and ontology by exploring new ways of making common sense on the basis of generative devices whose vocation is to arouse meanings, agreements, senses, new types of knowledge shared by those who participate, to transform them, make them sensitive to new questions, new possibilities of relationship, new modes of interdependence with collectives [33].

Economists need milieus where interlocutors force them to situate their knowledge, to get rid of the ideal of scalability for a change not only of scale but also of frame, to learn how they can become relevant. Interactive and demanding environments are vital for researchers to free themselves from the alliance that enslaves them to public institutions, companies, and foundations and to create relationships of interdependence with the collectives of the milieus that extricate them from the naive irresponsibility of believing themselves to be self-sufficient.

In sum, economists have every interest in taking part in an underground dynamic that is taking shape, but with interstices that open up, where researchers modify their practices to address themselves no longer to their colleagues by throwing flowers at each other, but to worlds such as they are made. This participation inevitably involves abandoning categories of thought that give the illusion that economics is the culmination of a normal evolution towards progress. This

conceptual questioning would rather show to what extent the economics is only an exception in the concert of ways of living and inhabiting the Earth.

This deep questioning makes us learn that modernity must be considered against the background of a destruction of practices of living together and of making culture, which persists today in the name of the necessities of competitiveness between nations assimilated to a zero-sum game. The conceptual neutralization restores its letters of nobility to the word 'reclaiming' [34] which means 'to become clean again', 'to reclaim what one has been separated from', 'to heal from this separation' to live differently than on the mode of existence resulting from the separation [35]. It is not enough to revolt against what dominates; it is also necessary to find our original authenticity to weave relationships between worlds [36].

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