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**For a New Biodiversity of Cognition in the Face
of Today’s Crisis**

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“Change is Always a Last Resort Change in Habits of Thought”*

For a New Biodiversity of Cognition in the Face of Today’s Crisis

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Abstract

The present crisis has revealed that around the globe we are often only able to react to crises when it is (almost) too late. This paper addresses and explains the mono-structure of thought that has led to this predicament and delineates a new model of cognition capable of creating a new biodiversity of thought and action, especially in the economic sphere. With this, future crises may not only be overcome but may also contribute to avoiding them altogether. This paper offers a vision which does not provide ready-made answers but rather aims more fundamentally at opening up a wholly new imaginative scope for the possible.

Keywords: Sensus Communis, Behavioral Economics, Economics, Pluralism, Epistemology, Standard Economics, Economic Education

JEL categories: A 13, A20, B13, B20, B41, B50, P40, Z13

* Thorstein Veblen (1898).

Introduction

Young people around the world are taking to the streets in the face of climate change and the destruction of the ecological foundations of life on our planet. What they demand is the creation of a new, different and hopefully better future. But how can people truly combine an understanding of the past and present with an imagination of what is possible in the future? How can they act in both a realistic and utopian manner? The current Covid 19 pandemic makes these questions even more acute. It makes it clear that around the globe we are often only able to react to crises when it is (almost) too late. Only as a last resort do politicians, scientists and citizens rely on public spirit and spontaneous empathic action. Yet the economy and society offer very little scope for cultivating it. Hence, public spirit only flares up as a stopgap in the form of spontaneous sacrifice that is unable to bring about lasting change.

What we really need, not only to overcome crises but also to be able to avoid them in the future, are new, truly pluralist points of cognition which create a new biodiversity of thought and action possible, especially in the economic sphere. In this essay, I would like to sketch a vision which does not offer ready-made answers but rather aims more fundamentally at opening up a wholly new imaginative scope for the possible.

1 The tasks of a new reflexive form of education

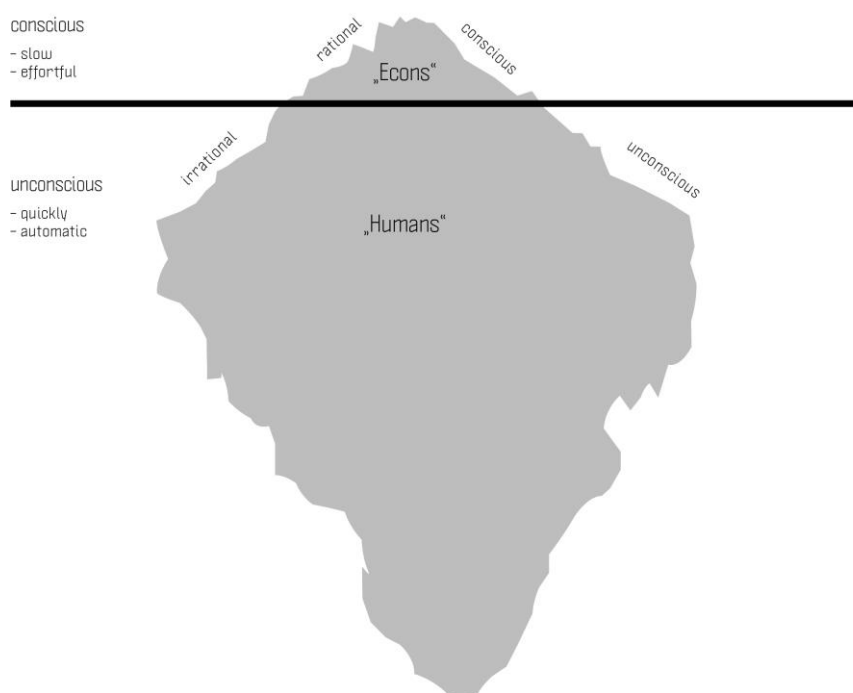
The challenge here involves less the abstract ivory tower of theoretical research. It is rather one of education. How can we learn to shape the future together with young people? Like the Netzwerk Plurale Ökonomik (Network of Pluralist Economics), I am convinced that this requires a new variety of methods and theories. But more is needed: models and theories have always been based on certain ideas about how people in general and scientists in particular perceive the world and the position they occupy in it. Elinor Ostrom speaks in this respect of a fundamental level of frameworks on which processes of perception are highly specific, but mostly unconsciously directed.

It is precisely at this level that I believe we urgently need a new diversity of knowledge, especially in economics. We need new forms of "knowledge of cognition" - and this not only in a passive singular, but in the active plural. For we live in highly complex times and in the most diverse habitats. In order to develop these we need several forms of cognition at the same time, and we also need the ability to choose between them freely and in a manner appropriate to the situation. What is needed is a biodiversity of consciously structured cognition, rather than a single paradigm of cognition which, by definition, is always only tacitly presupposed. But this will not be possible without increased abilities for

(self)reflection: Young people must be allowed to learn which alternative processes of cognition are open to them, how they can choose between them and actively apply them. They must be allowed to discover and organize the process of cognition themselves.

1.1 *Today's dismal state of economic education*

In the global standard theory of economics, things appear to be very bleak with regard to such diversity. This is because a largely overlooked paradigm of cognition prevails that has been based on the metaphor of the iceberg (Figure 1). According to it, just as more than 80 percent of an ice mass floating on the sea is located below the water surface, the vast majority of human cognition takes place below the threshold of perception and thus is outside the scope of reflection. As a result, instead of a conscious and actively organized biodiversity of cognition, only a solidified mass of cognitive processes is considered to exist, residing in the obscurity of the unconscious and inaccessible to the reach of any kind of active and transformative thought!



Iceberg Metaphor / Behavioral Economics

Figure 1

The psychologist and behavioral economist Daniel Kahneman (2012), for example, describes what this means more precisely: Only rational cognition can be considered here to be truly conscious, which embodies the essence of the homo oeconomicus. It signifies a calculating and quantifying means-to-end way of thinking. Its mode of operation can best be compared to a computer whose rules are programmed according to the logic of mathematics, or more precisely according to the rules of an optimization model. There can be no reflection of the underlying program itself; rational thinkers simply have no choice when it comes to the foundational rules upon which their choices are made.

Kahneman also assumes that rational cognition is a strenuous and slow process which can be illumined by the radiant light of abstract reason. No wonder, then, that the global standard economic doctrine focuses on this area of cognition alone. Regardless of what economics students do, they must always crunch numbers: As subjects of cognition they have to adopt a striking resemblance to their object of cognition, the homo oeconomicus.

According to the iceberg metaphor, an exclusively dark realm of irrationality is therefore hidden below the threshold of consciously calculating cognition. This is where, according to Kahneman, decisions are made quickly and as effortlessly as lightning, but not necessarily for the good of the people making them. Akerlof and Shiller (2015), likewise behavioral economists, even refer in this context to "monkeys-on-the-shoulder" who, surreptitiously and usually against people's own well-calculated interests, give whispered instruction about what they should do. This obscure field of subconscious cognition supposedly consists mainly of tacitly internalized habits. On the surface it describes an unreflective conceptual understanding, which in turn is triggered quasi-automatically by likewise unconscious preferences, emotions and ideological convictions.

1.2 Control instead of education

Since the unconscious is considered to be principally inaccessible to reflection, it seems impossible to illuminate this area through education. Instead, any new kind of conceptual understanding can only be provided in a kind of 'epistemic hurdle race' in which students remain largely unconscious of the hurdles they are jumping (Mankiw/Taylor 2014). In change management one refers in this context to the use of subliminal methods of controlled changes to thought and behavior by first unfreezing others' presumed iceberg of the unconscious, then moving it and refreezing it into new, desired structures and patterns - I have shown elsewhere how this works specifically in the context of standard economic theory (Graupe 2017). In order to do this an elite is required who, by modifying stimulus reactions, train the 'monkeys-on-the-shoulder' to behave correctly (behavioral economics speaks of "nudges") - whereby only the elite can decide on its 'correctness'. Sunstein and Thaler (2008) speak openly of 'libertarian paternalism' in which so-called 'decision architects' are supposed to set the framework for the behavior of the masses. Where the creativity and morals of the elite are supposed to come

from to train all those 'monkeys-on-the-shoulder' remains a mystery. At least standard economic textbooks make no mention of it.

2 A fundamental change of metaphors

In my opinion, standard economics has reached a dead end in this regard. This is simply because its epistemological metaphor of the iceberg is a misleading one. Instead, I suggest that cognition should no longer be imagined as a massive, solidified block categorically divided into one visible and one invisible component. Although human cognition may indeed sometimes be rigid, its fundamental nature is not: humans are also free to alter their cognition from within, thus are able to voluntarily replenish it and actively transform it in constant interaction with the experiences of concrete life and its demands. It is true that dynamic and creative processes of this kind occur below rational cognition. But this does not make them unconscious, they merely denote different forms of consciousness; they characterize completely new habitats of cognition. I consider exploring and cultivating these habitats together with young people to be the central task of a new form of reflexive economic education.

2.1 A new geology of cognition

In order to do justice to this task, I propose imagining different layers of cognition similar to the geological structure of the earth, thus creating a new geology of cognition (see Figure 2). This allows us to imagine cognition as an increasingly fluid and thus fundamentally dynamic process: At the very top there is an extremely thin upper crust of cognition that is completely solidified. This crust is supported by a somewhat thicker, extremely viscous lower cognitive mantle. Below it, instead of representing a void or even non-existing field, there is a massive lower mantle of cognition which exhibits both stability and plasticity. At its bottom, this lower mantle borders on a liquefied core representing a vibrant treasure of present world experience and its possibilities, thus of everything that is not yet known, but is potentially cognizable. Here, as it were, are all the opportunities and risks of the real world and their potential forms of cognition. These are only accessible to a genuinely independent radical-imaginary cognition, which in turn is fed by an innermost core of pure creativity. This core cannot be objectified in any way and can therefore only be contradictorily characterized as a "creative nothingness" (Nishida 2012) that is rich in potential but empty of what has already been perceived and understood. Cornelius Castoriadis (1984), for example, describes this as "social magma" to draw attention to its original dynamic.

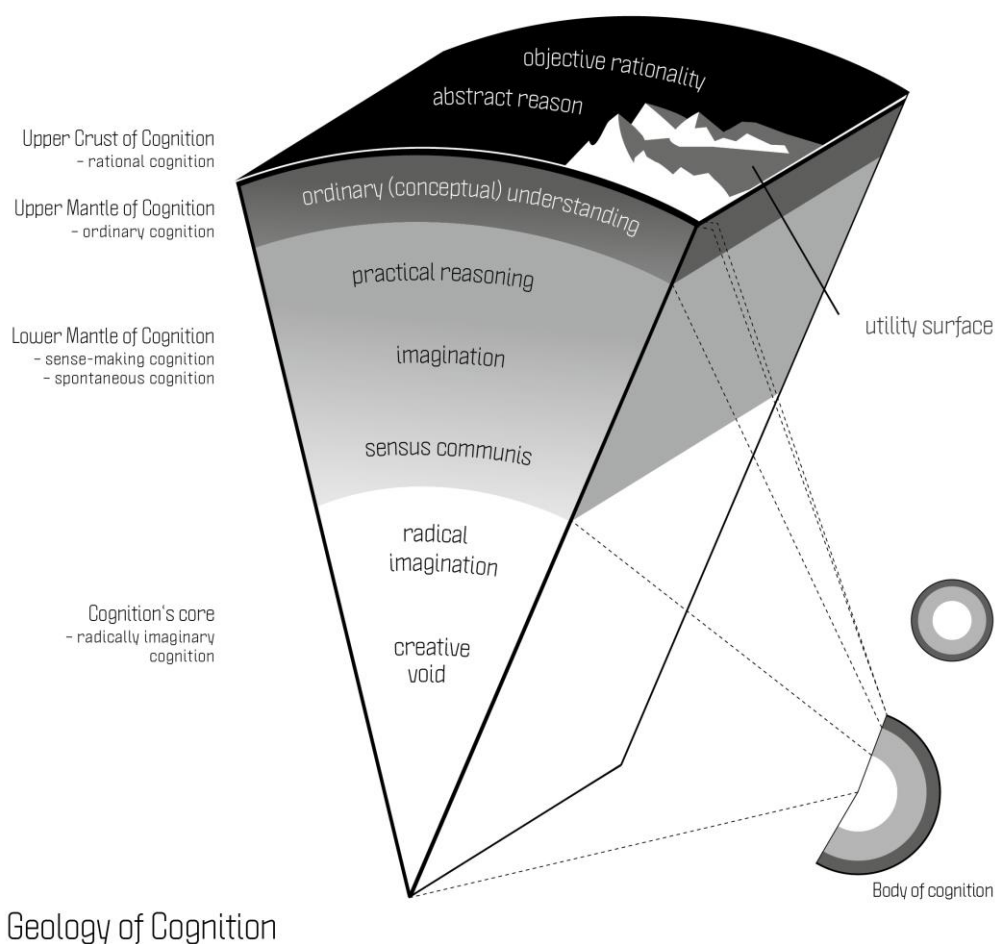


Figure 2

2.2 *The precarious status of standard economics*

If we compare the iceberg metaphor's two-layer model with that of the geology of cognition's four-layered rendition, it becomes clear that the former only makes visible the outermost and thinnest layers of human cognition. Below these, however, there is only terra incognita: habitats of cognition that are as unknown as they are unexplored. What also becomes clear is how fundamentally precarious these two layers are: as long as they encase the entire body of human cognition within a solidified and encrusted structure, the dynamics at its core can only ever make its way to the surface in the form of cataclysmic tremors or explosive eruptions. This is because these layers can neither withstand the internal pressure nor do they have the plasticity to adapt themselves to it. This results in a sudden rupture by which the mantles are in part blasted away with great force. For me, this is symbolic of a crisis-ridden economy that has no seismographic instruments at its disposal to deal with social and ecological dynamics, even though these dynamics are located directly beneath its feet. A reflexive economic education would help remedy this state of affairs.

2.3 *Reflection of rational cognition*

First of all, it must be made understandable how computational reason forms the uppermost petrified crust of cognition. Its rigidity stems from the fact that modern abstract rational thought has no relationship whatsoever to concrete life, nor should it. Instead, it must be completely independent of experience and, for this purpose, follow purely intellectual, essentially mathematical procedures. What is demanded is nothing less than total independence from all sensual perceptions as they are formed in the world of experience. Thus, rational cognition also proves to be unchangeable in relation to any concretely lived time. Even everyday abilities such as regretting past actions or learning from experiences are excluded - including any sustainable error of human ideas.

No wonder, then, that many economics students perceive an extreme gap between the theory they are learning and the world in which they are living. A new form of economic education should first help them to understand that this is by no means a coincidence, but rather a systematic requirement of their education. Far more important, however than to persist in such criticism is to enable them to truly shift their points of knowing.

2.4 *Reflection of ordinary cognition*

A first such shift can initially be made towards the second mantle of cognition, which can be imagined as an extremely viscous, nominally cooled lava flow. While it is no longer completely independent of experience, it is independent of all *present* experiences. This is due to the fact that the thoughts, actions and worldviews emanating from here are governed by mental habits that are not concerned with what actually happens in the present, but how it is perceived through the glasses of prefabricated concepts or stereotypes. As a result, a truly creative configuration of present conditions is impossible. Kahneman (2011), for example, aptly speaks in this respect of a "tyranny of the remembering self" where the conceptual mind weaves a web of words and meanings on the basis of what it has already learned, into which every current spoken word falls as if onto a grid. In this way it acquires a predictable meaning, which in turn triggers predictable behavior. These grids correspond to the "decision architectures" of behavioral economics.

2.5 *The revival of spontaneous cognition*

The geology of cognition does not usually negate that purely ordinary ways of knowing exist. The model goes beyond standard economics and recognizes the potential for an expanded scope of economic education. Its distinction consists in no longer ignoring forms of cognition that are relational to current experiences and relegating them to the utter darkness of the supposedly imperceptible. First of all, this new model advocates a form of cognition that is particularly conspicuous in acute emergencies - such as the current Covid 19 pandemic - yet is either completely ignored or viewed with suspicion by economists. It is this spontaneous

form of cognition that makes people not only react but indeed act in direct relation to life experiences.

Characteristic for spontaneous cognition are activities motivated by the *sensus communis*.¹ This cognitive sense makes it possible to let go of old judgments and prejudices, thus suspending their power to guide action while generating new imaginations in the face of the concrete demands of the present. The *sensus communis* thus makes it possible to perceive the living world before mental stereotypes or quantifying calculations evaluate it in the light of mere past memories. To this end, concrete sensory perceptions are merged with moments of reflection and operate from the deepest point on the lower mantle of cognition. Here old habits are dissolved and allowed to be released into the magma at cognition's core. Beyond the workings of the conceptual mind, the *sensus communis* detects new, potentially meaningful structures and stabilizes them initially through improvisation. Since it can meet the needs of the situation adequately and selflessly, it represents not only a genuinely creative internal sense, but also a moral sense related to public spirit.

What is important here is that spontaneous cognition cannot be operationalized in any formal sense of education. Rather, a "negative education" is required here, which does not imply anything bad but signifies the denial of all educational processes that merely train stereotypes of conceptual understanding or calculations taking place in the realm of abstract reason alone. Instead, the *sensus communis*, as both creative inner sense and public spirit, must be given free rein in concrete experiential situations so that action may professionalize itself in the face of immediate necessities. In the realm of the economy, the field of care work seems to be of particular importance here, where mutual dependencies of people as a condition of their existence are directly experienced.

Looking at the current Covid 19 pandemic, many people hope to see spontaneous common sense in this context develop into new habits of thinking and acting. Yet this may become illusory, as it in itself can only be effective in direct action and experience. Unfortunately, it will not be able to bring about a "Corona twilight of neoliberalism" of the kind invoked by the TAZ.

2.6 *The new discovery of sense-making cognition*

If experiential-relational cognition is to actually and effectively enter the periphery of ordinary conceptual understanding and thus the upper mantle of cognition, as well as be able to provide a basis as to change it, then it requires another biotope of human cognition which would now, as it were, be able to give shape to the entire

¹ The Latin term *sensus communis* is used deliberately here to encompass the wider and more complex understanding of "common sense" beyond mere practical judgement to encompass a genuinely creative sense which includes a spontaneous sensitivity for other humans and the community.

lower cognitive mantle. It is this field of sense-making cognition that has so far possibly formed the most complete blind spot of standard economic theory.

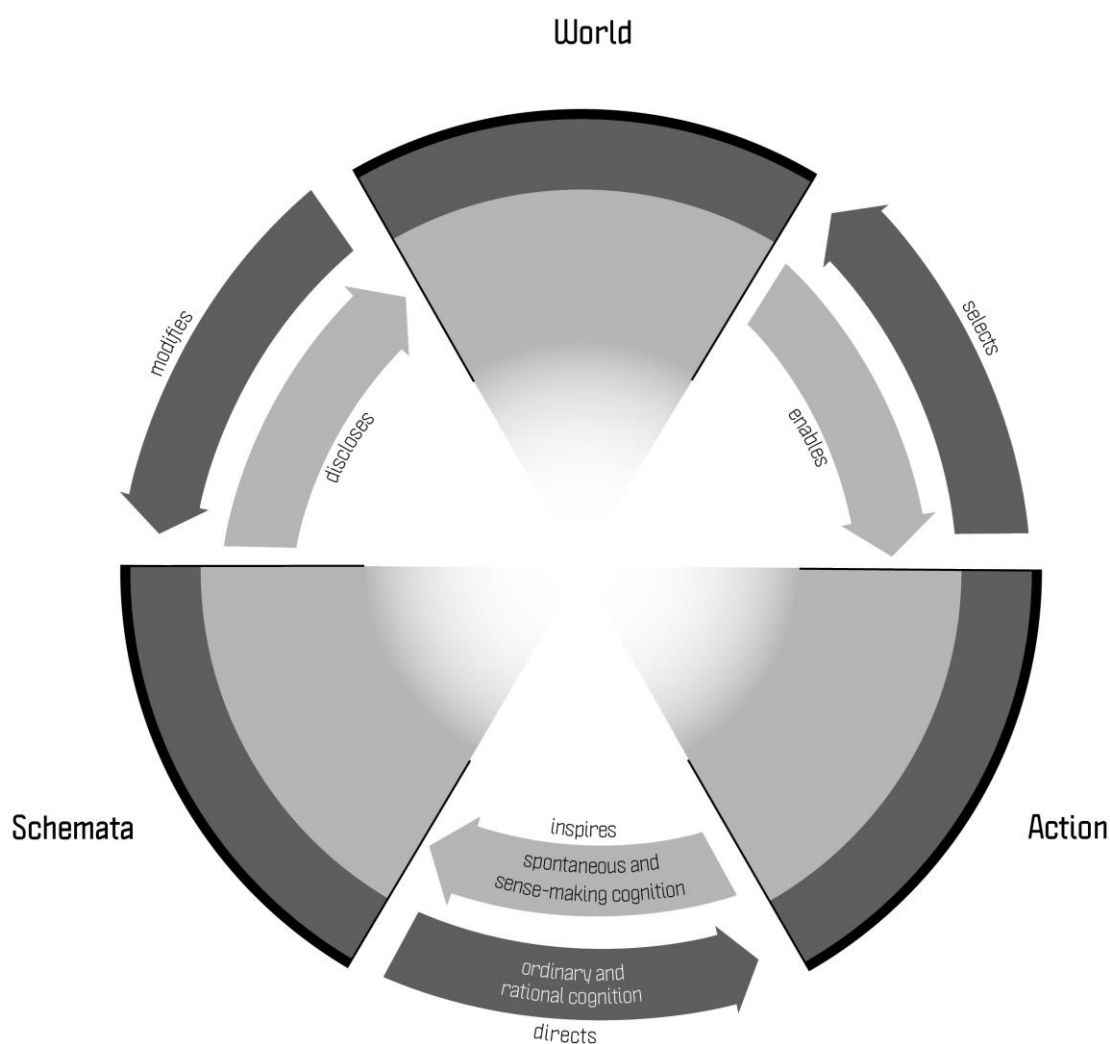
This form of cognition, like the spontaneous, is equally experiential-relational. It also manages to dip into the dynamic cognition's core by assimilating the *sensus communis*. Yet it is not limited to this level alone, but activates the imagination as well as practical reasoning. Imagination here basically means the ability to form creative ideas of the present and, beyond that, of what is possible in the future. With it, people advance from being merely concept-driven, reactive beings to creators of their own decision-making spaces and concepts.

While the imagination is rooted in a deeper sense of the present related to the *sensus communis*, it in turn feeds practical reasoning, which is also known as life wisdom (phronesis in ancient Greek). It is the ability to adequately understand concrete situations as well as to act accordingly. In doing so, it is by no means reduced to mere memories and instincts. It also includes cognitive and creative abilities to form judgements in concrete and thus experiential situations, to distinguish between the fertile and the harmful, and to attribute existential and practical values and meanings to things and processes. In doing so, it is also responsible for the formation of intentions that are not simply accessible to sensory perception. It is a form of life wisdom with which people can clarify what they really want and should do. In this way, it can overcome old habits of thinking and acting and create new ones as well, and thus be able to decide in the present about the effectiveness of the past, while also creatively altering habits and thoughts for the prospective future.

Sense-making cognition is thus responsible for the formation of new creative normalities. In order for it to manifest itself, it requires latitude for reflected action in the present paired with a broad knowledge of our social and historical development, as well as the promotion of imagination with regard to the creation of the possible future. All this can only be achieved with action-oriented and experience-based didactic approaches in which reflective action is combined with insights into the history of culture and ideas together with imaginative exercises, especially within a philosophical and aesthetic context.

2.7 The special dynamics of spontaneous and sense-making cognition

With the help of Figure 3 I would like to create another conceptualization tool that I refer to as "cycles of knowledge". These cycles, in addition to the geology of cognition, should facilitate an essential differentiation in the dynamics of spontaneous and sense-making cognition on the one hand and rational and ordinary cognition on the other. They schematically represent the horizontal sections in the cognitive body that are, as it were, interlaced with each other. The crust of cognition is to be found on the outer most edge while the core of cognition lies at its very center. Most importantly, Figure 3 illustrates that none of the processes of cognition represented by the four sections takes place exclusively in



Cycles of Cognition

Figure 3

the individual mind. Cognition is not even conceptualized as a bipolar relationship between the subject and object of cognition. Instead, it may be perceived as a kind of triangular relationship: First, every process of cognition here is comprised of schemata. These are, in short, cognitive patterns which were already established before the current situation and which consist essentially of solidified, largely simplified and socially conditioned memory patterns and habits. They can also be imagined in a more creative fashion as existing as well as potential cognitive maps or mental infrastructures. Moreover, there exist concomitant fields of action. As a consequence, in this visualization cognition is always presented as an active process, whereby it may range from contemplative gazing to everyday activities – such as caring for the sick – to complex scientific procedures. Finally, the third component inherent in cognition is the world itself where human actions unfold

and which is systematically different from the schemata humans generate from it. Imagine a pilot who, while looking exclusively at his navigation equipment (schemata), crashes into a mountain (world) while flying (action), without even noticing the oncoming danger beforehand! Schemata and world are not the same thing here, but are nevertheless related to each other.

Between these three areas - schemata, action and world - cognitive processes can now generate very different dynamics. The figure “cycles of cognition” highlights one essential difference: in rational and ordinary cognition, schemata (either in the form of abstract models and calculations or in the form of stereotypical memory patterns) govern action, so that this aspect of cognition can only be regarded as a quasi-instinctive reaction to the images in people's minds, i.e. as mere behavior. Behavior in turn selects and reinforces certain aspects of the world (e.g. if you only have efficiency calculations in your head and base your choices on them, you subsequently see the world essentially as a price-formed cosmos of goods and will therefore impact the world accordingly.) Because the high degree of schemata's independence from experience, the world for its part is at best only capable of modifying them. Therefore, they usually cannot be overridden – or if at all, only by means of violent shocks in times of crisis.

With spontaneous and sense-making cognition, it is not only possible to interrupt this cycle, but it may also potentially become completely suspended. This is because cognition here essentially begins with action: Practical action and the concrete experience it entails make possible the suspension of models, calculations and stereotypes as well as the creation of new imaginings. This, in turn, opens up completely new approaches to the world, which then motivate new actions. Thus, the direction in the dynamics of cognition becomes completely reversed!

2.8 *For a systematic biodiversity of cognition: the basho framework*

I am naturally not interested in simply throwing rational and ordinary cognition onto the garbage heap of history. Rather, I seek to create a vision of a true biodiversity of cognition by means of the *basho* framework (see Figure 4) I have recently created. 'Basho' is a Japanese term that for example means 'place' and also refers to 'concrete places of residence' or 'places of activity'. In Japanese philosophy it additionally includes the epistemic idea of habitats of cognition (Nishida 2012). The *basho* framework now recognizes not just two, but five such habitats: On the right is rational cognition, which neoclassical theory and the theory of rational expectations have elevated to a monoculture. Also included is ordinary cognition below it, which behavioral economics has stylized into an exclusive binary (both unconscious and irrational) counterpart to rational cognition. The two are now complemented (but not replaced!) by sense-making, spontaneous and radical-imaginary cognition.

The geology of cognition, as shown in Figure 1, creates an image of how spontaneous and sense-making cognition carry both the ordinary and rational, but at the same time are enclosed and constricted by them: They can no longer make their way to the surface of social perception and organization, and, since they are fundamental in the truest sense of the word, are concealed, ignored and suppressed in a form of epistemic violence.

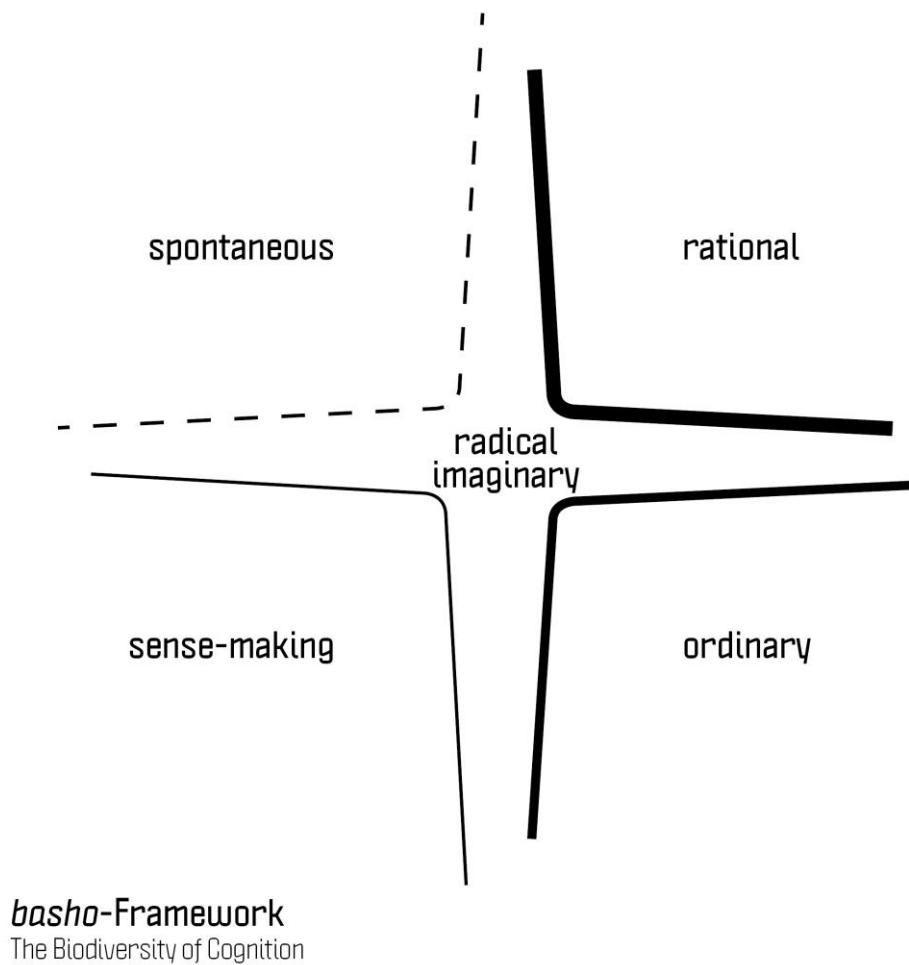


Figure 4

With the help of the *basho* framework I would like to counter this with a new visualization which covers not only the rational but all five forms of cognition. Strong tectonic forces in the depths of sense-making cognition make this possible: They generate new creative normalities so that conceptual understanding is incorporated into new decision architectures, thus disrupting its formerly rigid scaffolding. This in turn means that rational cognition loses its inflexible foundation and is capable of being penetrated. Rather than becoming susceptible to complete destruction through catastrophic eruptions or earthquakes, however, tectonic forces allow it to move independently like a continental plate on the lower mantles of cognition and drift on a limited part of the cognitive plane (the upper-

right corner in the *basho* framework). The areas that are revealed by this are now enveloped by the ordinary, sense-making and spontaneous areas of cognition, each of which form their own unique habitat of thought and action. The dynamics creating the overall surface emanate from activity stemming from the *sensus communis* on the cusp of the radical-imaginary. It is precisely here where both the load-bearing capacity and the flexibility of the cognitive layers begin to form in the first place.

Moreover, the radically imaginary can now ultimately also emerge into visibility: From the respective inner fault lines of all modes of cognition, the eye is able to glide freely and unobstructedly into its dynamic depths. This means that instead of coalescing into a broad monoculture, each mode of cognition conveys explicitly the insight that it itself is something that has only become specific more or less through a process of solidification against the constantly dynamic experiences of the present. As in geological surveys, one can learn how each specific form once originated in past dynamic activities.

At the same time, movements between the individual domains of cognition can be studied in order to learn how rigidities dissolve and reshape themselves in the present and the future. Certainly, the transition from the radically imaginary to spontaneous cognition is the flattest here, as *the sensus communis* acts in proximity to the requirements of dynamic reality. At the same time, it is necessary to realize that the surface of the latter is always flexible, even unstable, and therefore no permanent changes in habits of thought and action can be predicated on it. In contrast, the habitat of sense-making cognition is much more stable, since it is as much about solidifying habits as it is about dissolving them, thereby enabling normal states to change structurally over time. And the areas of ordinary, above all rational cognition, thus also fall abruptly from their steep rocky cliffs into the radically imaginary. Here there is no shallow transition, since cognition's postulated independence from present, or even all experience only allows transition into these in the sense of a cataclysmic fall.

3 Education toward reflexive independence

And yet: the fields of rational and ordinary cognition can now rest on an acknowledged lower cognitive layer, which, particularly with regard to sense-making cognition, can develop a load-bearing capacity. At the same time, due to the activities of the *sensus communis*, even the rational can glide freely on the radical imaginary. It is this imaginary itself which initially symbolizes the freedom of being independent from any particular form of cognition. At the same time, it also refers to the ability to continuously cultivate the freedom to decide on all other ways of cognition. Can the world be calculated and controlled using calculi and models? Can we rely on the quasi-automatic reactions of a fixed conceptual mind? Is there a need for profound, structural change towards a new creative normality? Do we require the ability to first spontaneously alleviate need in empathic care for

our shared world? By allowing people to learn to make such decisions can cognition be fundamentally experienced as an open, self-reflective activity.

In this way, the treasure, yet also the burden of our social and historical development encounter the dynamics of the present and the possibilities of the future while providing an opportunity to be dealt with in a "creative present". I consider this to form the essential core of a new reflexive economic education and represent a novel and true biodiversity of economic cognition where economic theory and practice become interdependent and mutually beneficial.

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