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Andreas Philippopoulos-Mihalopoulos
Editors

Knowledge- creating Milieus in Europe

Firms, Cities, Territories

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Introduction

Augusto Cusinato and Andreas Philippopoulos-Mihalopoulos

The Introduction contextualises the book within the scientific debate on the socio-spatial conditions which are thought to be conducive to creativity and innovation. After briefly sketching the reasons behind the urge for continual innovation that characterises the contemporary market economy, the Introduction presents the twofold basic hypothesis of the anthology, according to which (a) an ‘interpretative turn’ concerning creativity and innovation is pragmatically taking place within enterprise and more generally industry, and (b) mainstream economics finds it hard to recognise that turn due to its firm adherence to the ‘methodological individualism-behaviourism-cognitivism’ triad. The book suggests that within the composite family of theoretical approaches which are part of the interpretative turn, a hermeneutic approach fits better on both analytical and normative levels because of its concern for socially- and spatially-situated processes and declared ethic stance. The Introduction therefore sketches the analytical, empirical and normative implications of a hermeneutic approach with regard to creativity and innovation. Not only do crucial familiar notions such as noise, ambiguity, learning and also ‘the knowledge economy’ change meaning, if not value, but the structural rather than functional, and the intangible rather than tangible features of places are seen to play an essential role in the collective shaping of creative attitudes and aptitudes. A critically updated version of the Durkheimian notion of generative milieu turns out to be central in this connection. Comments follow on how the various contributions to this anthology help to substantiate this interpretative framework and to generate suggestions for policies and further research work.

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Frame of Reference

It is perhaps a truism to maintain that the global economy and, in particular, the economies of mature industrialised countries are going through a period of profound change. A period which is characterised by two major and interrelated trends: a redrawing of economic geography on a global scale and a transition from the industrial age to what is increasingly referred to as the “age of the knowledge economy”. In recent years, the change has accelerated dramatically, to an extent which suggests that it is ‘precipitating’ into a new division of labour at any conceivable scale (the global, the national and also the sectorial one), along with the rise of new mode(s) of production and the stresses that ensue on the social, institutional and also geo-political realms. It is not entirely out of place to enquire if we are in the presence of an all-encompassing change of paradigm—a revolution—in the sense that not only economic geography, technology and maybe culture, but also social and political relationships will subsequently no longer be what they were before. While admitting that it would be presumptuous to imagine that we could answer such a question, this collective work aims to focus on a perhaps limited but (the authors assume) crucial aspect of that supposed all-encompassing change, which concerns the emergence of a new kind of cognitive praxis within enterprises and industry at large, with respect to the cognitivist praxis that has long informed their approach to knowledge, innovation and management, and has ultimately been the basis of their extraordinary success in the modern age.

A few empirical figures are enough to sketch the on-going change in the global economic geography. The industrial sector’s contribution to global GDP dropped from 37.5 to 26.7 % between 1970 and 2011, while that of the service sector rose from 52.7 to 70.2 %.¹ In the OECD countries, the change has been even more marked, with industry contributing fourteen percentage points less to GDP over the same period, and services almost 19 % more. As regards the global distribution of economic activity, the centre of gravity is shifting from the Atlantic to the Pacific: while remaining largely dominant, the contribution of OEDC Atlantic members² to the world GDP has declined from 64.7 to 53.0 % in the same period, whereas that of the East Asian and Pacific countries has risen from about one seventh to about a quarter, due mainly to the growth of their industrial sectors, whose share has more than doubled.

On closer examination, however, the situation is more multifaceted. First of all, the world economy is not witnessing a process of deindustrialisation in any absolute sense. Globally again, the value of industrial production almost tripled in real terms (+174 %) between 1970 and 2011, sextupled in the East Asian and Pacific countries (+506 %) and almost doubled in the OECD countries (+72 %), though they were the most affected by industrial restructuring. The truly epoch-making phenomenon was the drop in industrial employment in the earliest industrialised countries

¹ Source: World Bank, *World databank* (Accessed: May 2014).

² Austria, Canada, Denmark, Finland, France, Germany, Hungary, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, United Kingdom, United States. Other states have been omitted because data are unavailable.

(−15.5 million units in the same period in the G7³), though it went hand in hand with an increase in production. To equate this admittedly dramatic change (‘dramatic’ because of the social effects it has generated) with material deindustrialisation is therefore misleading, and limiting in any case: what is occurring in those countries is the deindustrialisation of society and culture rather than merely the economy, in the face of the rapid industrialisation of other parts of the world.

Symmetrically, the global expansion of the service sector, which is generally seen as the other face of deindustrialisation, also needs to be interpreted with circumspection. Though no-one can deny that this sector has experienced even more intense growth than industry (+313 % of added value globally⁴), questions arise about how much of this growth is ascribable to the outsourcing of activities previously performed within (and registered as) industrial enterprises, how much to the globalisation of the economy and the connected need for specialised services and, *cæteris paribus*, how much to an increased demand for services by intermediate and end users. Although this is still subject to discussion (for example, Doloreux, Freel, & Shearmur, 2010; European Foundation for the Improvement of Living and Working Conditions, 2006), it is widely held that a major change is occurring within services themselves, with the rise of what is emerging as a structured sub-sector having a specific outcome (knowledge and innovation) and specific ways of ‘producing’ it, i.e., “Knowledge-intensive Services—KIS” (Windrum & Tomlinson, 1997, 1999).⁵ According to Eurostat, “Knowledge-intensive activities” account for 33 % of total employment in the EU(27), with more than 40 % in the Northern European countries, and a peak of 48 % in Sweden.⁶

At the crossing of this twofold structural change is the advent of ICTs. On the one hand, ICTs have made it possible for the production cycle to be segmented into separate parts and phases, services to be outsourced by typical industrial enterprises, and routine phases to become footloose almost anywhere around the world, all of which have contributed to the slimming down of industry and to the corresponding growth of the service sector. On the other hand, the advent of ICTs has given rise, not only to a spectacular growth in both information processing and possibilities of remote-command-and-control within productive processes,⁷ but also to a somehow paradoxical and in any case unexpected outcome, in that it has emphasised the knowledge-creating role of dialogical communication (which ‘enjoys’ significant margins of ambiguity), when the common expectation was that syntactical communication would have gained an absolutely dominant position (precisely thanks to its power of ruling out any margin of ambiguity).

³ Source: OECD, “Civilian employment in industry” (Accessed: March 2014).

⁴ Source: World Bank, *World databank* (Accessed: May 2014).

⁵ Or other specifications, such as “Knowledge-intensive Business Services—KIBS” (Miles et al., 1995) or “Knowledge-creating Services—KCS” (as proposed in this book).

⁶ Eurostat (Accessed: March 2014). Data refer to 2007.

⁷ It is estimated that “global internet traffic” per month increased from 0.001 to 20,634 petabytes (1 petabyte = 10^{15} bytes) between 1990 and 2011 (Source: www.Cisco.com, “Visual networking Index”).

As announced above, the present work grounds its *raison d'être* in this last connection, aiming to show how a new cognitive praxis is becoming established within firms and industry in general, to the point that the mainstream economic approach to knowledge and creativity becomes obsolete. The theoretical debate on this topic is well established within social sciences in general, itself drawing from the philosophical domain, but it does not yet seem capable of cutting into the very core of economics: a core which still features a stringent linkage between methodological individualism, logical positivism and cognitivism (Lavoie, 1990; Weber & Van Bouwel, 2005). Criticisms of this triad are not new but, inasmuch as they focus on one or the other term without considering the links which hold them together, outcomes remain inconclusive, irrespective of their epistemological soundness and rationality. An emblematic example of such a condition is represented by Gibbons et al. (1994), which can be considered a milestone along the path towards an alternative viewpoint on knowledge within economic reflection, with respect to cognitivism. Their essential message is that the time *was* right to move from “Mode 1” to “Mode 2” in addressing the issue of knowledge construction, where the two Modes synthetically stand for the individualist/cognitivist and the relational approaches. The fact that the two modalities are labelled in such an anodyne way attests to the extent to which the ultimate epistemological-and-pragmatic difference between them remains unachieved. It is not enough in fact, as the authors do, to take a phenomenological view, according to which there is both an individualistic and a relational mode for the construction of knowledge, because it does not allow them/us to recognise that in moving from the one to the other mode, the ‘object’ of knowledge changes radically: namely, it passes from information about something which (it is presumed) stays outside the subject’s mind, to information about the subjects’ minds.

To come to grips with that triad, a more radical criticism is needed, which points directly to its pre-analytical assumptions. This criticism is the outcome of a synthesis between post-modern and structuralist thought, and we understand it here as hermeneutics. While post-modern thought points to the link between logical positivism and cognitivism, but without distancing itself from individualism (and sometimes flirting with it), structuralism mainly calls into question individualism, without however rejecting any positivist and cognitivist stance and mainly the idea that an ultimate Truth is, and that Truth consists in the structure itself. The rise of *a* hermeneutic approach⁸ within epistemological thought in the last century rightly raised questions about the above-mentioned triad as a whole, thus shedding light on the modern ideological remainders which lie within both the post-modern and the structuralist approaches. Here, we consider it to be the most suitable tool we have for understanding what is now happening in cognitive-and-creative praxes within firms, industry and, perhaps, society at large: that the cognitivist approach, from having been a factor of development of the creative forces in the industrial era, is turning into their fetters, and that it is in fact going to be *pragmatically* replaced by a hermeneutic approach.

⁸ Referring to hermeneutics, we make use of the indefinite article “because it proposes *one way* of understanding things, not prescribing *the way* of understanding things” (Öberg, 2012, p. 40).

It follows that not only does the notion of the ‘knowledge economy’ become much denser than the depiction that conventional economic thought makes of it, but that the imperative for innovation which is inherent in it entails a *prior need to innovate within the representation of the link occurring between knowledge, creativity and innovativeness*. A concise examination of the genesis of the present critical socio-economic condition and the main answers economic reflection has devised for coping with it will allow us to focus this work’s subject and aims more effectively.

Epistemological Implications of the Present Crisis

The condition of crisis currently affecting the earliest industrialised economies is the late outcome of a combination of events that took root almost half a century ago, and now concludes with the demise of the industry-centred culture, especially the part of it that those economies inherited from the pairing of Fordism and Keynesianism. That the Fordist model was declining in its birthplace from the late 1960s is well known (for example, Sugrue, 1996), but at that time it had not yet deteriorated to the same extent elsewhere, though important diseconomies of scale were appearing, mainly in labour and social relations at large (Garofoli, 1992). For their part, Keynesian policies were giving their best in Western countries, in terms of the most spectacular age of growth *cum* social peace. A first crucial blow came to this exceptional condition from the repeated oil shocks of the 1970s, consequent on the loss of tight political and also military control over oil producing countries.⁹ The shocks laid bare and tore down a pillar Keynesianism, which had until then remained implicit, concerning the absence of bottlenecks in the provision of productive factors, and especially energy. For its part, the ICT revolution of about a decade later, made it possible to overcome the main residual rigidities typical of Fordism, related to the technical indivisibilities of factory units: thanks to remote control devices, routine activities from then on became virtually footloose on the global scene, thus tearing down, as a secondary effect, another pillar of Keynesianism, relative to the fact that demand-side policies would yield their main effects within the national boundaries thanks to the relative immovability of industrial plants. Moreover, the entrance of new and, crucially, giant industrial competitors (BRICS) beside the traditional G7 has seriously compromised the capacities of Western economies to secure world market stability, with imaginable consequences for industrial investment propensities and effectiveness of demand-size policies.

⁹The beginning of that loss of control can be emblematically dated back to November 7, 1956, when the UN obliged the United Kingdom and France to withdraw their forces from the Sinai, which they had occupied after the Egyptian president Nasser nationalised the Anglo-French Suez Company.

The piling up of economic, social and also political stresses consequent on these events has probably reached breaking point over the last half decade. The dramatic rise of public debt incurred by many countries in order to prevent or alleviate social tensions consequent on deindustrialisation, an insufficient growth rate to compensate for technological unemployment, the spectacular move from industrial profit-seeking towards financial rent-seeking made possible by the advent of ICTs, the ephemeral attempts to sustain growth through speculative bubbles (mainly in the financial and real estate sectors), the continual and substantial transfer of resources to oil producers, with the suspicion that some of them wind up in the hands of international terrorism (ironically, for use against the oil buyers themselves), the rising awareness of the unsustainable effects of the capitalistic model of development on the ecological and, maybe, also social systems, and, what is more, the declining belief that an imminent and easy socio-economic recovery and/or a technological breakthrough will make it possible to sort out the mess—all these adverse circumstances raise serious concerns about the present real driving forces of both economic change and the new ‘international division of labour’.

The early post-Fordist recommendation for flexibilisation (Piore & Sabel, 1984) along with its celebrated ideological antecedent *Small is Beautiful* (Schumacher, 1973) and the theorisation of the economic advantages and also higher ethical value of local SME systems (Becattini, 1978, 1989) do not seem to have provided an adequate answer to the need of firms and regions to stay competitive in an increasingly challenging market. Flexibility can indeed take the opposite forms of submissive or assertive adaptability to stresses, with crucially different implications. In the first case, which is typical of price-taking firms and systems, such as Industrial Districts (Belussi & Caldari, 2009; Marshall, 1919), the easiest though myopic answer consists of cost-cutting, carried out through wage-lowering or its macro-economic correspondent, currency devaluation, or through opportunistic externalisation of costs (such as depletion of common goods); in the second case firms and/or economic systems anticipate strains by innovating, deliberately stressing the market for their own advantage. But whilst in this latter case there is no upper limit (because any innovation opens the way to clusters of further ones), in the case of submissive adaptation there is a lower limit, which coincides with the resilience threshold of the system under consideration. The demand for flexibility thus remains convincing on condition that it refers to its assertive connotation, that is to attitudes and aptitudes to innovation.¹⁰

The demand for innovation can also turn out to be a misleading notion however, if one uncritically adheres to the Schumpeter (1934[1911]) distinction between the act of ideation and its implementation for profit. In fact, if the distinction is suitable for analytical purposes, in order to identify the entrepreneur’s essential features,

¹⁰ The establishment of a link between assertive behaviour and innovation makes it possible to leave aside the third hypothesis, of an aggressive reply to stress. Aggressiveness is indeed the opposite but substantially similar facet to submission in that both originate from the need to maintain one’s own position unchanged, which is exactly the opposite of the attitude towards innovation.

which Schumpeter indicated as impetus towards innovation, it becomes unrealistic from a pragmatic viewpoint. The implementation of a new idea does not simply involve deciding to put it materially into operation, because there is plenty of room for things to go differently from how one might initially have forecast their course. In a condition of bounded rationality—inside which everyone lives, independently of his/her degree of awareness of the fact—nobody can predict all the contingencies that might follow a certain decision, especially when action is taken within a strategic context. In such a condition, the *act* of innovating actually turns into a *procedure* of innovating, maybe made of a very finespun sequence of ideational and applicative steps. It ensues that the *factual* entrepreneur can be an innovator insofar as he¹¹ is also an inventor, i.e., creative. At any step, he has to decide whether and how to carry on the ideation-implementation sequence and within this sequence, according to Schumpeter, his very distinctive role is to decide when and how to make the process to turn into action, thus opening up the prospect of new possible trajectories of ideation-and-innovation (Dosi, 1982): in a few words, no-one can be a successful entrepreneur, if not an entrepreneur *tout court*, without being creative, at least as long as he is living outside the Olympian world of absolute rationality.

This latter expression, however, gives us as little room as possible for a twofold interpretation, within which the rationale of this collective work becomes more precisely conveyed. There is no doubt, referring again to Schumpeter, about the belief that Humans, and also the Super-Man “entrepreneur”, do not live in an Olympian condition, but it is one thing to maintain with him (positivist as he was) that they have at their disposal a reliable criterion (the logical-empirical method) for assessing the convergence of mental representations to reality, i.e., truth, and a completely different thing to question the soundness of such an assumption. In the first case, the intelligent individual—as the entrepreneur is, by definition, thanks to his marked aptitude for *inter-ligere* within things—may assume (and in fact assumes) that he has at his disposal the current best possible approximation to the right/true way of seeing things, thus arguing that he is legitimated to contend with the residual margin of under-determination which inevitably remains between any representation of reality and reality itself. And he copes with this issue by gambling on his ability to employ innovation to upset the current under-determined state of affairs to his own advantage, thus interposing a volitional act to bridge the gap between his limited knowledge and truth. Success or failure will eventually decide if innovation marks a real approach or an errancy with respect to truth, so that any innovation which turns out to be profitable represents an advancement towards it—the Truth—according to the finest interpretation of the “spirit of capitalism”. From this point of view, successful innovation represents a pragmatic step in the process of progressive achievement of Knowledge/Truth, which is an entity that would pre-exist any possible realisation of it, and profit is the prize which is due to those who come first in accomplishing this essential human mission: “Ye were not made to live like unto brutes, But for pursuit of virtue and of

¹¹ The “Man of Action is always a ‘he’ for Schumpeter” (Swedberg, 2008, p. 26).

knowledge”, Dante wrote in lines that can be considered as a proto-manifesto of Humanism.¹² In this vision, knowledge lies ontologically before innovation, and whilst the inventor—the “philosopher”, according to Adam Smith—works behind the front line, conceiving devices and plans to attain it, the entrepreneur—the “adventurer”, according to Jean-Baptiste Say—fights on the front line, at the risk of his own life. A fight that takes place between mind and ignorance, in the obscure space which separates imperfect human knowledge from Truth: a space that Man can however dependably explore, being endowed with the reliable Cartesian “light [or method] of reason”.

According to the second interpretation, doubt arises that there is no reliable criterion actually to assess convergence to Truth, so that Truth itself loses all ontological status, and also relevance. Humans ineluctably live in the dark, and can only feel their way, possibly and preferably together, by looking at each other, sharing hopes, expectations, wishes, concerns, successes and failures, and in any case exchanging uncertain and provisional attainments: in a few words, by nurturing a common sense of being part of that same dramatic but also exciting condition. No Truth, no Knowledge has then to be discovered (Madison, 1990), but only knowledge has to be humbly and anyway provisionally constructed in a somehow rhizomatic way.¹³ Within this portrayal, innovation appears as a bud, an emergence springing from experience and nurtured by the example, encouragement and possible recognition of fellow travellers. ‘Recognition’ is perhaps the key-word which gives sense to the entire process: to know and above all to be known-in-return by others is the most awaited reward—the true gamble—which induces people to run the risk of coping with innovation, and successful innovation substantially means having gained a further piece of *re*-cognition. On the other hand, i.e., facing the unknown, innovation opens new possible trajectories in this tentacular, tentative, open-ended learning and also social-building process: it is no longer bounded rationality which is at stake here, which anyway evokes the existence of an un-bounded, absolute knowledge, but procedural rationality¹⁴ (or knowledge), which builds itself *en chemin faisant* (Le Moigne, 1990).

Moving from one to the other of the two above-mentioned perspectives entails a shift from the imagined steady relationship between mind and the external world under examination to the inherently smooth and changeable relationships between minds; from data and information ‘coming from objects’ to the multifaceted ways/attitudes through which data are perceived and information is constructed, and specifically to the search for peculiarities—and above all naiveties and fallacies—which inevitably permeate those ways/attitudes. In more appropriate language, that shift entails passing from the logical-positivist, cognitivist and essentially individualistic viewpoint to a hermeneutic perspective on knowledge and, by extension,

¹² The *Divine Comedy, Hell, Canto 26*, H.W. Longfellow’s Translation. Available at: <http://www.gutenberg.org/files/1001/1001-h/1001-h.htm>

¹³ See Philippopoulos-Mihalopoulos in this book.

¹⁴ Terminology is clearly drawn from Simon (1976).

creativity and innovation. Whereas from the previous viewpoint, knowledge comes first with respect to creativity and innovation—creating essentially means discovering something which exists prior to it, and innovating means implementing discoveries—in the second perspective knowledge is co-essential to creativity—knowing is creating and vice versa—and innovation is the pragmatic way for opening new courses to knowledge development, where ‘development’ does not necessarily entail any ‘advancement’ (there is no ontological entity to be reached), but only enrichment of ‘articulations’.

Main Hypotheses

On the premises outlined in the previous sections, the first hypothesis in this book is that *a complex set of events is, somehow surprisingly, leading enterprises to shift pragmatically from the modern-cognitivist approach to knowledge and innovation towards a hermeneutic approach*. ‘Surprisingly’, because though the philosophical criticism of the unfoundedness of the modern way to knowledge dates from about the end of the Nineteenth Century, no-one would have expected that it would enter the social domain through enterprise, the champion of modernity. Enterprise actually founded its rise and success on the then implausible¹⁵ message that Men can “become masters and possessors of Nature” (Descartes¹⁶). How this astonishing shift towards hermeneutic practices might have occurred constitutes the first issue this book will have to deal with.

In this connection, though the terrain of the cognitivist approach to knowledge and innovation has been widely explored (as the ‘institution’ of technology as a specific branch of applied science shows), the terrain of a hermeneutic approach still lies quite uncharted, and anyway is not systematically tackled by economics.¹⁷ With reference to this point, the book puts forward a second hypothesis, according to which, *while enterprises, independently of the degree of awareness of stakeholders, are pragmatically experiencing such a hermeneutic turn, mainstream*

¹⁵ See Le Goff (1964), Lenoble (1969).

¹⁶ *A Discourse of Method*. Available at: <http://www.gutenberg.org/files/25830/25830-h/25830-h.htm>

¹⁷ In one of the few writings on the relationships between hermeneutics and economics, Don Lavoie notes that, whereas very little of the literature on the shift from the positivist towards a hermeneutic approach “has taken up economics explicitly [...] contemporary economics has for the most part simply ignored the ‘interpretative turn’. [...] economics and hermeneutics have by now grown so far apart” (Lavoie, 1990, pp. 3–4). The main exceptions are *Old Institutionalism* and the *Austrian School*, which the contributors to Lavoie’s work often refer to. For a more recent review, see Priddat (2012). There is a crucial difference however in the ways this literature and our work understand relationships between hermeneutics and economics: whilst the former takes on a hermeneutic viewpoint of economics, our work is interested rather in examining how and with what consequences hermeneutic praxis is now entering the economy, despite the widespread indifference of mainstream economics. This latter recognition in any case represents the common starting point of the two approaches.

economics is hanging back within the positivist-cognitivist-individualistic viewpoint,¹⁸ with the consequence that its approach to knowledge, creativity and innovation has become obsolete, precisely because new praxes have spontaneously come about *within industry*.¹⁹

What then has happened at the level of praxis, and what blockage has occurred in economics, to bear out such an interpretation? In relation to the first question this book suggests that a conjunction of factors is leading enterprises pragmatically to adopt an approach to knowledge different to that whereby they had been able to become, in modern times, the key agent in socio-economic development. These factors, which, taken in isolation, would not have been able to bring about such significant turn in just a couple of decades, can be summed up as follows:

- (a) an increasingly pervasive critique of modernity. Originating in the sphere of philosophical thought and experienced in different ways in the realm of arts, this critique has found expression in the currents of postmodernism and hermeneutics, which differ in their ethical emphasis, as we shall point out shortly. One might have expected these developments to remain confined to such ethereal but admittedly fertile domains, or to penetrate only very slowly into social practices at large, probably as the younger educated generations enter the world of work. It is doubtful however whether they would have been able to come to the fore by virtue of their persuasive power alone, in terms of a change in cognitive practices within the world of production. To achieve this, they would have had to prove not only the superiority of the exercise of the suspension of judgement (which constitutes the fundamental common element of these theoretical developments; Rovatti, 1992) over the decision-making attitude typical of modernity and entrepreneurship, but also that this exercise can be profitably integrated into the system of rules, routines, conventions and techniques which characterises and, in the final analysis, ‘structures’ the institutions of capitalism;
- (b) the rise to prominence of a culture of consumerist opulence in the second half of the last century. Although initially it seemed destined to remain subordinate to the aggressiveness and all-pervasiveness of the producers’ marketing strategies, this culture has proved itself capable of generating new room for manoeuvre in consumer behaviour, albeit within or in relation to those forms of conditioning (de Certeau, 1990). In fact, while

¹⁸ For a review, see Noorderhaven (2004), who conclusively notes: “Judging by what is published in the major research journals, it seems fair to say that the majority of the international business researchers implicitly or explicitly adhere to a philosophy of science that is closer to logical empiricism than to hermeneutics” (p. 91).

¹⁹ Whilst starting from a philosophical rather than pragmatic viewpoint, Mirowski (1990) foresees that “neoclassical economics [...] will find itself progressively isolated from [now emerging] cultural conceptions, defending an increasingly reactionary conception of ‘natural order’ as mechanically deterministic and static” (p. 105).

- at the micro level these manoeuvres are tactical responses, incapable of affecting the on-going power struggle, taken together they present themselves objectively as strategies, which demand analogous strategic responses by producers. The admittedly conditioned creativity²⁰ of which consumers show themselves capable, led producers to become interactively and flexibly involved in the game of creativity, to relate to 'other' and evolutionary mental patterns and, finally, to changing situations where consumption is concerned. This has opened up a completely new field of opportunities for business to perform a shift of attention from consumer preferences, considered as given or, at most, to be actualised from their latent status, to the socio-cultural processes that mould them. Significantly, the focus of business strategies has changed dramatically from the study of individuals in their aggregate manifestations to that of the individuals in their socio-cultural milieu;
- (c) the rise, where enterprises are more specifically concerned, of a culture of competition through innovation rather than scale economies and, more generally, cost. According to a (now already dated) post-Fordist approach, this change in orientation is due to the absence of an institutional apparatus which is able to achieve market stabilisation at a global level, a pre-requisite if the opportunities offered by economies of scale are to be effectively exploited (Piore & Sabel, 1984). In line with a post-modern approach (which is less encumbered by any reference to Fordism), the change is rather due to the above-mentioned endlessly evolving consumer preferences with respect to the predictability initially supposed. Anyway, a shift has occurred within the content and meaning of innovation itself: rather than concerning the functional properties of goods (in relation to supposed given or induced needs), innovation increasingly concerns the symbolic connection consumers establish with goods, whereby consumption is understood as process of emotional relationship with others, and goods as 'experiential' items (Holbrook & Hirschman, 1982). Last but not least, the changed epistemologies of collectives that, following such thinkers as Deleuze and Guattari (1986), Latour (1993), and more recently Bennett (2010), point to a proliferation of individual hybrids and trans-individual human/nonhuman assemblages. This has brought a realisation that enterprises are not isolated observers but parts of larger and indeed unpredictable assemblages of spatial and temporal considerations that must take into account the current doubting and redrawing of traditionally-thought lines of distinction between the human, the natural and the artificial, the organic and the inorganic, the topological and the ethical, and so on. Ecological considerations are now taking centre stage in rhetorical and

²⁰ In reality, could a form of non-conditioned creativity ever be conceivable? Is it not the will to gain further degrees of freedom from conditioning that stimulates it?

- applied strategies, redefining responsibility in a much broader and inclusive manner than simply the enterprise-consumer nexus;
- (d) the advent of the telematics revolution, which has served as the catalyst in precipitating all the above-mentioned circumstances into a new communicative-and-creative praxis within enterprises, but also in society at large. As Cusinato notes in this book, routine communication inside enterprise previously required recourse to the human factor, since the peripheral monitoring devices only worked in analogue mode, without any possibility of their being integrated into a complete monitoring system. It is therefore possible to realise how crucial the concern was to coping with ambiguity within those circuits in the mechanical-Fordist era (Sennet, 2006). With the advent of ICTs it became possible fully to integrate the peripheral monitoring devices into a single ‘digital’ network, thus making human intervention superfluous *in syntactic communication*, but freeing its generative potential in *dialogical communication*. At the same time, the mythology that precedes and reinforces the ICT revolution in all its phases (including its current manifestation), has enabled the fusion of a semantics of human superfluity with the material aspect of the shortcomings of the said revolution, to the point that most material gaps and inconsistencies are bridged by a semantic intervention of some telematic Hegelian *Aufhebung*. The main suggestion in this connection is that, given the philosophical and cultural premises mentioned above, the establishment of dialogical practices within firms, *which is connected to the ICT revolution*, opens the way to their entry as normal practices—i.e., praxis—into the social domain at large: in our approach, this would mark entrance into the ‘knowledge age’.²¹

In relation to the blockage of economics within cognitivism while praxis would have set off along broadly ‘post-modern’ paths, this is due to the enduring link between methodological individualism and logical-empiricism within the neoclassical economics (or economics *tout court*). What allowed the latter to attain a status tantamount to natural science, was its adhesion to the Newtonian mechanistic paradigm, according to which the behaviour of any observable object can be traced back to the properties (which are given) of its elementary parts. So, on the one hand, a bi-univocal relationship between given or exogenously determined individual properties and aggregated behaviours is established within economics (methodological individualism); and on the other, only objectively observable properties and their logical derivatives are taken into consideration (logical-empiricism), and among these derivatives, the chief idea that *homo aeconomicus* acts as a maximising computational machine (cognitivism) (Klamer, 1990). If this mechanist feature has endowed economics with a consistent analytical basis, this has occurred at the cost of (a) isolating the *homo aeconomicus*’ rationale from the complex system of

²¹ This point is drawn from Compagnucci and Cusinato (2011).

inclinations, emotions, passions and, more comprehensively, apparently irrational elements which shape both individual and collective behaviours and (b) equating the socio-economic whole to the mechanical summation of its parts. As concerns the first aspect, the present work will show how the emotional component is co-essential to the cognitive process and hence creativity, as post-modern thought suggests; with respect to the second aspect, one could oppose that the insertion of agglomeration economies within the neoclassical economic theory exhaustively explains possible non-linear outcomes without invalidating the individualistic approach. However, it is one thing to assume that the working of those economies releases some properties that are inherent in the elementary parts; and a completely different thing to suggest that certain milieu conditions (rather than the more functionalist term ‘agglomeration economies’) modify those basic properties, as a structuralist approach does. As mentioned above, we think that a hermeneutic approach to knowledge and creativity fits with both the post-modern claim for a cautious perspective on the mind’s ability to advance towards truth (however it may be conceived) and the structuralist claim for the *generative* capacities of certain milieu conditions that stay outside the individual handling capacities.

Main Issues

The point at issue is therefore to understand whether economic thought (rather than merely economics) is capable of bringing about such a shift in perspective, thus reconciling itself with the hermeneutic turn that is taking shape, maybe unconsciously, within enterprises and arguably society at large. All we can do in these introductory pages is to provide evidence of the upset which is occurring in some key notions related to knowledge and creativity by assuming a hermeneutic stance, and which a renewed economic thought cannot avoid facing:

- (a) *Noise*. In information science and commonsense meaning, noise is a disturbance in the transmission of a signal, due to interference or entropy, which distorts it compared with an expected, though unlikely, form. This notion necessarily entails that of code: only by possessing a code can the receiver in fact distinguish between familiar and unfamiliar, correct and incorrect, meaningful and non-meaningful, expected and unexpected signals. From this viewpoint, noise is plainly a ‘bad’. Its status becomes multifaceted, however, when communicators employ hermeneutic attitudes, which radically question the given categorisation between noise and order, as well as the moralistic understanding of order as good and noise as bad. Thus, ‘order from noise’ becomes married to ‘noise is good’—the latter in its double moral and utilitarian sense. When considered from this perspective, noise becomes a potential source of original information, which could also be susceptible to being deliberately ‘produced’ within certain controlled conditions in order to enhance (or indeed stymie) creative attitudes (Atlan, 1979).

- (b) *Ambiguity*. Ambiguity consists in the expected though vague ‘amount’ of information that could stem from noise once a suitable mental adaptation has been carried out (Piaget, 1967). In this case too, whilst ambiguity appears as a ‘bad’—a sign of undecidability (rather than indeterminacy, as happens in the case of noise)—when it is seen from the syntactical/information-science viewpoint, it too becomes a basic and maybe irreplaceable ‘good’ in a hermeneutic perspective (Monod, 1970): a sort of intermediate material between noise and knowledge (Visser & Visser, 2004) that is firmly conditioned by contingency (Luhmann, 1995), in its turn conditioned by spatial and temporal parameters.
- (c) *Learning*. From a hermeneutic viewpoint, learning appears as the capacity to reshape cognitive attitudes, rather than acquire information on the basis of a supposed given and reliable cognitive code. This is not a wholly new horizon in cognitive sciences, since Bateson (1942) distinguished between “simple-” or “proto-learning” and “deutero-learning”, that is learning according to a certain “apperceptive habit” and learning about that and other possible mental habits. More recently, in dealing with creative firms, Nonaka and Takeuchi (1995) updated Bateson’s insight by recalling the more anodyne labelling he had originally coined: “Learning I” and “Learning II”. Echoing him, they define Learning I as “obtaining know-how in order to share specific problems *based upon existing premises*”, and Learning II as “establishing *new premises* (i.e., paradigms, schemata, mental models, or perspectives) to override the existing ones” (p. 44; emphasis added). It is however worth noting that, while the two modalities of learning appear as alternatives in a postmodern approach (with the insistence it puts on the limits of modernism), they appear as intertwined and equally necessary components of the cognitive experience when approached from a hermeneutic viewpoint: the former modality focused on ‘things’ external to mind, the latter on the mental attitudes by which ‘things’ are perceived and finally categorised. This has important consequences for learning: cognitive excursions are now expected to go beyond repetition as identity (namely, dealing with like cases alike), and construct an understanding of repetition as difference, whereby cognitive repetition reapplies its premises every time *anew* and is consequently fundamentally exposed every time to the contextual, environmental noise. The immediate consequence of this is that every cognitive process becomes reflexive. Such a development runs the risk of self-annihilation for learning however, since the process may end up crashing against the wall of self-dissimulation of limits; but at the same time it makes learning truly radical, that is rhizomatic, and able to push the limits of cognitive immanence in seemingly innovative ways.
- (d) *Creativity*. The commonly used notion of creativity is borrowed from Poincaré’s (2011[1914]) concept of “discovery”, according to which “[it] consists precisely in not constructing useless combinations, but in constructing those that are useful, which are an infinitely small minority”

(p. 51). In this situation, too, it is not the veracity of that notion that is being contested, but the fact that it just depicts the epiphenomenal aspect of the creative process—*combination*—without questioning how this process essentially happens: is it, for the sake of paradox, the outcome of a random re-arrangement within the individual’s cognitive repertoire²² or, once acknowledged that the notion of randomness only reflects our margin of ignorance about the factual chain of events, is it possible to investigate elements which ultimately come into play in the creative process and the way(s) it may re-combine them? To gain a preliminary insight into this subject, let us quote a definition proposed by a scholar of hermeneutical persuasion, according to which “creativity is the aptitude to enlarge the space of the mental possibilities with which we view the world: *it is therefore the art of shifting the points of view* from which an observation is made” (Bocchi, 2013; emphasis added). The emphasis here is moved from the content of the extant mental repertoire (from the re-combination from which creativity necessarily springs), to its complement, i.e., the context within which the individual concerned *might* replace his/her own repertoire, where the conditional suggests both the uncertainty about the fact that the individual triggers the process and the unknowable content of the complementary set with respect to which s/he will choose to *re-contextualise* things. So, if creativity is the outcome of an attitude/aptitude to re-contextualise rather than re-combine knowledge, the issue at stake becomes how to enhance propensities towards such an exercise. From this, we propose a conception of creativity that goes beyond the phenomenological and even the distinction between subject and object/environment, and, first, becomes immanently inscribed within the milieu conditions of its production; second, it finds itself in a position to affect the way needs for creativity and its modes of production are generated, though always contingently and never unilaterally; and third, it is itself subject to a continuous process of reflexive superimposition of limits and limitations, thus enabling itself to push the limits of immanence always further but always from the inside and always with respect to its limitations.

- (e) *The meso-dimension*. Another main consequence is a reinterpretation of the meso-dimension within the economic discourse. Leaving aside the naive (though common) reading of this subject according to which the meso is something lying midway between the micro and the macro, it is here

²² This is not the Poincaré case. According to him, useful combinations spring from the interaction between the conscious and the unconscious level. The researcher’s deliberate effort provides the unconscious with raw unrelated materials, and this latter works as a “sieve”, to select from the infinite possible combinations the “only few [which] are harmonious, and consequently at once useful and beautiful” (Poincaré, 2011[1914], p. 60). Though shedding important light on the emotional component of creativity, leaving the metaphor, the question remains unsolved as to how this process actually works, and how the two levels actually interact: are we sure that the unconscious does not subliminally endow with usefulness the solutions it feels as beautiful?

considered as the domain wherein some essential untradeable goods (mainly, trust and knowledge) can be produced and circulate in “satisficing”²³ amounts and ways. Within this view, the anthology opts for the idea that the meso-dimension does not simply act as a facilitator for the diffusion of such goods, essentially following Schumpeter (for example, Dopfer, 2006, 2007), but as a generator, in that it induces people to re-contextualise knowledge, i.e., to become creative. This idea is grounded in the seminal notion of *generative* milieu put forward by Durkheim (1895, 1898), and the applications it has had (and is having) in the regional science (though, curiously, without making any mention of Durkheim himself²⁴). Except for amongst the staunchest followers of Schumpeterian thought, the idea that certain milieu conditions can foster knowledge, creativity and innovativeness, has spread rapidly within the regional science, giving rise to a variety of approaches aiming at substantiating the notion of the meso, including Lundvall (1992), by the notion of “National Systems of Innovation”, Morgan (1997), by “Learning Regions”, Cooke, De Laurentis, MacNeill, and Collinge (2010), by “Platforms of Innovation”, and especially the GREMI, through the notion of “*milieu innovateur*” (see Camagni & Maillat, 2006).²⁵ With respect to these approaches (and others of a similar kind²⁶), this book puts forward the idea that they ultimately fail to explain analytically how milieu conditions work in enhancing creativity because they do not deal adequately with the role that the physical component of milieu—i.e., the spatial arrangement of all kinds of things within it—performs in fostering de/re-contextualisation practices, that is hermeneutic practices. This book points therefore to this last topic, by leveraging on Durkheim’s seminal contribution about the milieu’s *generative* role, which remained inconclusive precisely on this point. And conversely, it distances itself from the usual functional approaches and related notions (mainly ‘cluster’), due to their inappropriateness to account for the *generation* of new elements rather than their functioning, within a certain socio-spatial context. The establishment in the following chapters of the notion of “Knowledge-creating Milieu—KCS” will precisely respond to this purpose.

- (f) Finally, the *knowledge economy*. The different recourse to the cognitivist or the hermeneutical notion of knowledge gives rise to a very different image of the knowledge economy itself. According to mainstream economics, it is understood as the stage of capitalist development characterised by recourse

²³ Here too, the term is drawn from Simon (1956).

²⁴ On this point, see Cusinato (2015).

²⁵ It seems the time has come to question if regional science is actually becoming or is *tout court* the science of the meso-economy.

²⁶ For example, Scott (1999), Hemlin, Allwood, and Martin (2004), Meusburger, Funke, and Wunder (2009).

to knowledge on a previously unheard of and increasing scale—in particular the codified form of knowledge, specifically connected with the development of ICTs.²⁷ Our criticism of this kind of approach does not focus so much on its degree of realism—the definition it gives is so evident as to appear banal—as on its capacity to restore the intimate nature of the change that is occurring as compared with the preceding situation, the industrial economy, and mainly culture. This change is not, according to our and others' criticisms, purely quantitative (however major it may be), in that processes and products embody a far higher quantity of knowledge than in the past, but rather a qualitative one. For example, Florida and Kenney (1993) and Gibbons et al. (1994), to recall some crucial contributions, place this change in the shift from an individualistic towards a relational viewpoint (and connected practices) on learning inside firms, organisations and also local and regional systems.²⁸ These contributions have not however fully realised that the opening to the social dimension causes a shift towards a hermeneutic approach because the cognitivist idea intrinsically remains that comparison of different viewpoints helps one approach the right/true vision of things. The present book finally argues that the simple recognition of the role the hermeneutic approach is pragmatically assuming within industry will eventually induce economic thought to emerge from its increasing condition of obsolescence with respect to the evolution which is observable in the remaining human and social science as to knowledge and creativity, by leveraging on the not many and not always explicit and systematised cues which it is now possible to read in this direction within the economic literature (for example, Lavoie, 1990; Leydesdorff, 2006; Nguyễn, 2010; Nonaka & Takeuchi, 1995).

Aims

Having depicted the book's epistemological and disciplinary background, we can now introduce its goals and contents in a detailed way. The crucial thing to realise is that, insofar as a hermeneutic approach proves to be more conducive to creativity than the conventional one, it becomes crucial to set out the conditions that improve attitudes and aptitudes towards re-contextualisation of cognitive schemata, which is the basic exercise of hermeneutics. Some of these conditions relate to the personal sphere and are concerned with intellectual factors (skills/competences/training), psychological factors (perceptive propensities), emotional factors (the pleasure of relaxing, maybe transgressing conventions, exposing oneself to new experiences and making new syntheses), material factors (corporeality and spatiality), and

²⁷ For example, OECD (1996), Foray (2000).

²⁸ This 'relational turn' on knowledge has also had consequences on spatial research, as Khan, Moolaert, and Schreurs (2013) show.

finally the more strictly rational dimension (deliberate purposes and the established relationship between means and ends). These topics have been explored over many years in the conventional approach²⁹ and, though deserving of further investigation, are not the subject of this work, except to point out that exposing them to a hermeneutical approach changes their system of reference on both theoretical and empirical realms.

Rather, this volume sets out to examine the milieu conditions which we believe influence the attitudes and abilities to practise the hermeneutic exercise. Or rather, since the hermeneutic practice is in any case performed, even when subjects believe they are operating exclusively in line with conventional learning procedures, it is possible to argue that *the anthology sets out to examine the milieu conditions that influence aptitudes consciously and at the same time affectively to adopt a hermeneutical approach to learning, on the assumption that this approach possesses a creative potential which is significantly superior to that of the cognitivist one.*

In this epistemological context, 'milieu' is not understood as one side of a dialectic concerning distinction/connection between the individual and the environment. Rather, developing Durkheim's seminal contribution, it is emphatically understood in the way Deleuze and Guattari (1986) portrayed it, namely as the space of the *middle*, where things pick up speed and into which one is thrown, battling with the competitive need for creativity from one's position as merely one part of an infinite assemblage that includes not just individual bodies and their environment, but significantly all the various strata of emergences that are generated when individual bodies and environments flow within and against each other. From this viewpoint the adopted notion of milieu is consistent with Camagni's notion of "local milieu", according to which it is "a set of territorial relationships encompassing in a coherent way a production system, different economic and social actors, a specific culture and a representation system, and generating a dynamic collective learning process" (Camagni, 1991, p. 130). What this work aims to achieve is to ascertain how those "territorial relationships" actually work in generating such "a dynamic collective learning process", by emphasizing that, whilst the term "territorial" encompasses both the social and the spatial dimension, analysis of the role of this latter dimension remains substantially unachieved. The fact that Durkheim himself, while repeatedly maintaining that the spatial configuration of objects within the milieu is of crucial importance in fostering generative power, did not explain how it actually works further induces us to examine this intriguing issue. If we succeed in providing a 'satisficing' explanation, it will open up a critical aspect on the normative dimension, in the sense that appropriate spatial policies might shape the milieu's generative effect.

Arguably, our overriding and indeed all-encompassing purpose is to contribute to the work various authors are pursuing with a view to (re)constructing a theory of spatial policies in the knowledge age, in the awareness that the approaches deployed in the industrial era, on which many urban planning and design practices

²⁹ For a review, Ochse (1990).

are still belatedly based, have not only become obsolete, but have also lost most of their social legitimacy (for example, Cusinato, 2012; Soja, 1989; Young, 2008; Zukin, 1982, 2010). By questioning such practices, we are interested in reinstating social legitimacy to them, but only once the various attempts at engineering, directing, politically and economically guiding and at the same time *dissimulating* such engineering, are discussed. We shall do this by matching the measurable aspects of milieu which Durkheim pointed as crucial, such as social volume, relational density and physical configuration, with the symbolic and also pre-conscious ones, variously seen as landscapes, lawscapes, nomotopes, nomospheres or indeed atmospheres (Philippopoulos-Mihalopoulos, 2013), and focussing on how atmospheric handling can turn out to be both benign and desired.

Lastly, a few words about the title chosen for this book. Tackling the subject of “knowledge-creating milieus” is an ambitious undertaking, for at least two reasons. Firstly, because the concept of milieu, however intuitive and widely it is now used in regional science, is still analytically elusive. More usual notions in mainstream economics, such as agglomeration, cluster, industrial district³⁰ and also region would sound more familiar than ‘milieu’, thanks to their better analytical foundations and empirical evidence, but they do not render (and rather refuse any contamination with) the generative role this notion is endowed with (cf. Buttner, 1971). Although clear that it is employed to represent a system of local conditions which are generative of specific social effects, the process whereby it yields these effects is not so clear. Our work puts forward the hypothesis that the answer lies where Durkheim located it—in the relationship between ‘volume’, ‘density’ and ‘space’—but especially where he left it inconclusive—that is, with reference to the role of spatiality and its symbolisation at the collective dimension. Secondly, our undertaking is ambitious in that it formulates the hypothesis that the milieu also possesses specific knowledge-generating capacities. Since cognitive experience is bound to pass through the minds of individuals (unless we believe, with Durkheim, in the existence of a collective consciousness), it follows either that certain conditions in the milieu foster individual learning—but in this case it would be inappropriate to speak of ‘the creation of knowledge’—or that something happens at the collective level where learning is concerned. And it is in this precise direction that our work points, suggesting that such conditions contribute to the formation and spread of attitudes and aptitudes for learning in ways which are not only more effective in terms of creativity than the individualistically considered ones, but *new and different* from them. The analogy with the Saussurian pair *parole* and *langue* is evident: while the *parole* can only stem from individual acts, the *langue* forms and evolves at the collective level and imposes its rules on the speech of individuals: it is only in the play-margin between the steady rule of the *langue* and the erratic tendency of *paroles* that novelties arise in the *langue*, which in turn reflect on *paroles*. Here, we are interested in exploring that generative play-margin, also in its

³⁰ À la Porter (1998).

spatial dimension: what elements it is made of, and how these work in giving rise to knowledge-creating potential.

Contents

The book consists of two parts: one part theoretical, the other devoted to empirical research. In the first part, we examine and systematise the epistemological and disciplinary background (and also hinterland), the questions the book sets out to tackle, the conceptual apparatus and research methodologies. The second part is devoted to case studies, conducted at organisational, urban and territorial levels in a number of European situations. Their purpose is twofold: to test the soundness and the heuristic power of the adopted theoretical approach, as compared with other current approaches, and to outline a framework for policies to cope with spatial, social and institutional conditions to enhance the generative potential of milieu at various scales.

Theoretical contributions are ordered in such a way as to provide our view of knowledge and milieu with consistent epistemological and analytical bases. As regards the epistemological side, the option we suggest for a hermeneutical approach has (1) to relate consistently though critically to the extant theoretical debate and, specifically, the analytical and pre-analytical premises that more or less expressly underlie the mainstream economics approach to knowledge and, *à cascade*, to creativity and innovation, and (2) to demonstrate higher/wider heuristic power with respect to that same approach, in that it allows investigators to discern relevant new aspects and also naiveties which block further investigation, and policy makers to devise more successful strategies to cope with that triad. In order to be conversant with current theoretical debates, we do not disregard the criticisms that, for more than a century, have been made against positivism, logical-positivism and the typical expression of the latter in cognitive science, i.e., cognitivism³¹; however, instead of adopting a dismantling attitude, we find more expedient to show how certain developments to which the cognitivist approach has given rise on the material plane and precisely at the crossing between science and production, are paradoxically at the origins of propensities towards a hermeneutic approach to knowledge, and also radical criticism against cognitivism itself.

This option not only stops us from falling into the trap of purely destructive criticism, such as that certain post-modern approaches lead to, but allows us to look at the advent of ICTs as both the main achievement of the cognitivist paradigm, and the event that marks the *from within* commencement of its obsolescence. This is our take on hermeneutics. It will be future developments that have the last word on this topic: at the moment, as developments are just starting (or are perceived as such), it seems only possible (and necessary) to provide that approach with sound analytical

³¹ Whereas behaviourism can be reputed as the corresponding typical expression within positivism.

bases and to show that it can serve as a foundation for new and fruitful opportunities in the cognitive-pragmatic domain. We now turn to a presentation of the content and design of contributions.

Paolo Garbolino's opening chapter of the theoretical part offers the basic traits of the twentieth century's epistemological debate in a critical frame. His focus is specifically on scientific thought, which is characterised by a concern for the truthfulness of mental representations. The intertwined issues of the ontological status of 'truth' and how the truthfulness of assertions can be assessed permeate and give substance to the entire body and history of the epistemological debate. Within it, Garbolino chooses a thread that refers to recent socio-historical and more widely ecological trains of epistemology. Assuming the neo-positivistic view as the necessary reference term (if for no other reason than to measure consistency and the possible higher explicative power of alternative approaches), he notes a crucial aspect concerning the clear-cut separation it established between the phases of discovering a hypothetical 'law' and validating it. Only the latter pertains to the scientific domain, whereas the former lies in psychological and sociological realms that are resistant to any possibility of decisive empirical testing. The above distinction is crucial with reference to the theory of innovation because it allowed (and allows) scholars and practitioners to depict innovation as an activity which is (epistemo)logically distinct and follows chronologically from ideation (as Schumpeter paradigmatically did): ideation works as the hypothesis that the idea it conveys is profitable, and innovation as the empirical test concerning its actual profitability. As Garbolino reminds us, this is the structure of the linear model of R&D, which, however, lacks a sound theoretical basis because it is not possible to exclude that the ways logical and/or empirical tests are conceived may themselves also be imbued with pre-analytical elements—"the glasses of a *paradigm*", in Garbolino's words—thus possibly hindering the conception of some crucial experiments. Criticism of neo-positivism therefore focuses on re-establishing connections between the scientific concern for attaining reliable assertions about reality, on the one hand, and the socio-historical context within which hypotheses and tests are inevitably conceived jointly, on the other. The consequence is that only a dialectical work between the two sides is epistemologically admissible from then on. This is the threshold for hermeneutics, at which Garbolino halts.

Daniele Goldoni takes over from where Garbolino leaves off. He introduces hermeneutics through a hermeneutic critique of the notion of creativity, which characterises the post-industrial, knowledge-based economy. The idea that creativity is a/the privilege that advanced societies freely enjoy, with the ultimate goal of achieving sustained economic growth along with social cohesion (a refrain which appears in almost every EU document³²) lies in an ideological stance, where 'ideological' is intended in the Marxian meaning of removing some aspects of

³² And which actually stresses the acuteness of the concern about the compatibility between the two goals.

the real world which would seriously challenge the dominant social structure (and superstructure). Albeit admitting that creativity fosters competition and economic growth, strong doubts arise, first, as to whether creativity allows all subjects to take part in and advantage from its presumed all-inclusive arena, thanks to its supposed innateness to individuals and free accessibility; and, second, whether it is essentially conducive to socially good outcomes. Universal accessibility to the creative arena is indeed highly questionable because of the elevated (and increasing) entry barriers in terms of increasingly high degrees of skill—“absorptive capacity”, as economics significantly³³ labels it—that are required to interact effectively within creative circles: evidence of the present extent of social exclusion in advanced, knowledge-based economies does not leave much room for doubts about that contingency (Compagnucci & Cusinato, 2014). With reference to this aspect, it could in fact be countered that it is matter of erroneous forecasts rather than ideological blind spots. Yet no admission is observable in official documents about such a possible mistake, Goldoni remarks, and emphasis continues to be put on the inclusive power of a creativity-based economy. With respect to the second remark, he notes that the pervasive belief (from which this book does not wholly escape either) that creativity essentially yields good social outcomes³⁴ is a by-product of the need capitalism has to believe in (and promise) economic growth cum universal inclusion, as a condition for achieving a minimum social legitimacy. On this issue, the author recalls how much dictatorial systems in the ‘short century’ have made recourse to the ideology of creativity as a lever for involving people in their authoritarian if not evil designs. Anyway, his message is that an a-critical belief that creativity is conducive to socially good outcomes can induce people to fall into the trap which the alliance between capitalism and the media continuously renews to gain their minds (and maybe also bodies). A hermeneutic—or post-hermeneutic³⁵—stance is thus called into play, to unveil the inescapable amount of unconscious, but also ideological content which is inherent in human expressions (and their interpretations). It is within such (post-)hermeneutic play that genuine creativity can arise, according to him, and it is no accident that his contribution opens and closes with a narration about how various kinds of creativity take form within various kinds of musical experience: Daniele Goldoni is in fact a musician besides being a professor of aesthetics!

Further developing the above pragmatic-and-interactional notion of knowledge, Giorgio De Michelis questions the role space plays in cognitive processes, especially after the advent of ICTs. Having concisely noted that space matters functionally for no other reason than information repositories (human minds included) are

³³ ‘Significantly’ because recourse to the term “absorptive” rather than “interpretative capacity” is symptomatic of the cognitivist approach which underlies the mainstream economics viewpoint on creativity, and more widely learning.

³⁴ Where ‘good’ here means ‘enlarging opportunities to individuals and groups’, especially the most deprived ones.

³⁵ In that it applies to messages stemming from every sort of media, economic relations included.

spatially distributed, he addresses the role space plays within this pragmatic notion of knowledge. From an individualistic viewpoint, knowing is possible insofar as individuals become able to detach themselves from something ‘other’ (which becomes ‘other’ precisely because of detachment), while mentally re-presenting it. Furthermore, individuals *learn to know* when they become able to realise detachments—to distinguish—on the mental rather than the purely factual plane, and in this occurrence physical space plays a metaphorical though essential role. The way by which they become able to know and learn however depends strictly on transmitted and acquired experience *within ‘situated’ socio-spatial conditions*, i.e., places. Possible pertinent and even effective systems of classification for an individual or a community are actually, if not potentially infinite, innumerable, and only locally established routines can turn a certain system into the ‘normal’ one, in the double sense of common and institutionalised. It follows that, once the idea of pragmatic-and-interactional knowledge has been embraced, space is not simply a functional condition for making it possible for knowledge to arise and also spread, but turns out to be an entity which takes shape simultaneously with the cognitive act, in that this latter gives space to a specific image and content: “Knowledge (for action)—De Michelis writes—is what links words and space coupling distinctions and sense-making”, and since meaning systems are context specific, “language is the means through which we ‘appropriate’ space transforming it into place”. Thus, if we look at ‘milieu’ as a knowledge-generative place, “space emergence, in its complexity and multiplicity, encompasses and justifies the creation of [the other two canonical components of milieu, i.e.,] social volume and relational density”, rather than merely joining them (which is what De Michelis ascribes to the interpretation of milieu Cusinato here draws from Durkheim). The final suggestion is that changes—including deliberate changes—occurring *in* space have an effect on cognitive attitudes in that “any new space modifies the way people access, create and share knowledge”, and this allows De Michelis to deal finally with the question of what happens to the couple knowledge and space with the advent of ICTs. Not only do space images and praxes multiply—“augment”—but attitudes towards knowledge creation increase for at least three reasons: first, because the design of ICT-based systems transforms the ‘physical’ space of possibilities for action; second, because it also changes the ‘relational’ space of possibilities and, third and most important, because it enhances possibilities for experiencing switches among different contexts. The lesson the author draws is that, if the notion of space is co-essential to knowledge, acting on the milieu’s generative capacities entails intervening on its spatial component; though De Michelis argues that also the reverse holds, which is of the greatest relevance from the normative viewpoint, this remains an open question in his writing.

With specific reference to the firm, Carla Simone makes the above optimistic depiction of the ‘augmenting’ role of ICTs more multifaceted and intriguing. While agreeing that (a) knowledge and related innovative aptitudes stem from interaction, and more precisely, in her approach, from collaboration among the firm’s stakeholders, and (b) ICTs augment opportunities for improving information processing, storage and exchange, she assesses the risks attendant on their arrival