

# PROCESS THOUGHT AND BUSINESS NETWORK RESEARCH

for Work-in Progress  
Special Track: Time and process in business network research

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## Abstract

The objective of this paper is to make a contribution to the ongoing work to further depict and understand the process characteristics of interaction and networks in the context of business development. Based on a fundamental appreciation of the interrelated and dynamic characteristics of business activities within as well as across company borders, there is a call to further develop the study of time and process in interactive constellations. In particular this regard contributions to clarify the meaning of time and process, the timely aspects of business action and the methods (or methodological constructs) for studying business interactions as processes – in time.

My contribution will in particular be to discuss aspects of the first of these topic areas; the meaning of process – with possible implications for the third; methods for studying business interactions as processes. This will be done by addressing and analyzing a few selected contributions from within historical process philosophy which emerged as a loosely unified area of philosophy in the early 1900s. These philosophers were particularly focused on interpreting, at the level of highly generalized metaphysical and cosmological philosophy, what characterizes the creative processes of becoming of entities in relation to human experience. This particular orientation should be seen against the background of impressive advantages in science, technologies and business economies at the time in combination with the tremendous impacts of Darwin's evolutionary theory to philosophy and theology. They represent attempts at explaining the processes of creative man-related evolution which represented a radical rejection of historical empiricism and rationalism at the time. For instance process philosophers contributed substantially to formulating what has later become the fundamental epistemology of scientific knowledge where knowledge is seen as propositional – as theory - rather than as certain, true and stable.

I will in particular focus on some of the contributions by the leading process philosopher Alfred N. Whitehead. His theory of becoming of actual entities is particularly about a detailed analytical interpretation of creativity as an interactive, internally and externally related process (Whitehead, 1928). Parts of this focus on what characterizes the interactive processes of mind that we typically associate with imagination, analysis, intuition etc. In other parts, Whitehead interprets – in contrast with earlier philosophers - the world of actual entities as interactive in itself. Phenomena out there are seen to move, change and influence one another to the extent that they actually interact without there necessarily being human minds involved at all. Finally, he combines this understanding of the interactions of human minds with his understanding of actual entities in the world into a fairly detailed elaboration of a conceptual theory of creativity in the world in relation to human experience (Leclerc 1990, Dibben 2008, Olsen forthcoming). As part of this, Whitehead also explored into a conceptual understanding

of time as epochal of nature (at the level of ontology), which sparked off a lasting debate among process philosophers over the foundations of epochal and continuous conceptions of time (Felt, 2002).

There is no reason to expect metaphysical philosophy from the early 1900s to contribute much to our understanding of the empirical world of business networks in any direct sense. The ambition in this paper is rather to see if something might be extracted and simplified at the level conceptual abstraction that might be useful to our discussion of process and time in the context of business research.

There has been a few attempts at linking management and organization research to process philosophy, most notably Chia (1999), Tsoukas & Chia (2002), Cooper (1976), Weick, Sutcliffe & Obstfeld (2005) and Clegg et al (2005). From the other side, philosophers like D'Arcy and Dibben (2005, 2008) and Cobb (2007) have attempted linking in the opposite direction from philosophy to management theory. Neither seems to really bridge the two fields – partly it seems – because both parties do not really dive too deep into the other side of the relationship. Another strand of thinking which at least implicitly seems to have harvested substantially from process philosophy, is Actor-Network Theory, which has focused on shaping analytical constructs as methodological devices for empirical studies of creative processes in their making. The actual link to process philosophy is well documented by Harman (2009). From the perspective of business network research, I believe the productive use of process philosophy would be at the level of conceptual abstraction and methodological constructs somewhat similar to the ANT approach – but discussed with particular focus on analytical and methodological challenges within business network research, and related to the analytical concepts that are already there.

**Keywords:** Business networks, process, time, process philosophy, research methods

## What is process philosophy?

Nicholas Rescher (1996) has presented a relatively easy introductory to process metaphysics (or process philosophy)<sup>1</sup> that introduces the overall perspective and offers a brief overview of the various areas of thought broadly addressed. A characteristic of metaphysics is to articulate ideational perspectives for understanding the world about us and our place within it. It is not designed to compete with what is represented by everyday knowledge and scientific understanding, but it can – indeed, should – absorb and supplement such understanding within a comprehensive and harmonious overarching perspective (ibid: 1).

One version of process philosophy can be characterized as theories that hold that process has *primacy* over things, that substance is subordinated to process, that things are constellations of processes. Another version holds that process has *priority* over substance, which implies that things are always subordinated to processes because processes inwardly engender, determine, and characterize the things there are. The opposite view of process thinking is said to be represented by “substance views”. Of the two types of process thought, the one that holds that process has primacy over things is associated with “a strong” (Heraclitean) view. The other type that holds that process only has priority over things, is referred to as the weak (Empedoclean) version. (See also Tsoukas & Chia 2002, Van de Ven & Poole 2005 and Hernes & Bakken 2006).

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<sup>1</sup> He also offers an extended bibliography on the tradition

The process philosophers of the early 20<sup>th</sup> century most cited are Charles Sanders Pierce (1839-1914), William James (1842-1910), Henri Bergson (1859 – 1941), John Dewey (1859 – 1952), Alfred N. Whitehead (1896 – 1947) and Wilmon H. Sheldon (1875 – 1981). As their primary antecedents, Rescher points at Gottfried W. Leibnitz (1646 – 1717) and Georg W. F. Hegel (1770-1831). In particular Leibnitz' early theory of “nomads” (units) understood as “bundles of process activity” or “centres of force” that he saw as constituting the phenomena of the world rather than any sort of fixed substances, came to represent a particular influence on Whitehead's effort to expand the quantum theory to a general ontology (Leclerc, 1990). The influence of Hegel's dialectic conception of process appears to have been relatively more influential in the somewhat younger Sheldon's theory of bipolar tensions, or “creative polar opposites” in which the tension between opposites is seen to engender change processes (Rescher: 24).

There are considerable differences across those philosophers. A major kind of difference has its roots in what type of process is taken as paradigmatic. For instance, Whitehead saw quantum theory in physics as the paramount process type. Charles S. Pierce and Henri Bergson on the other hand saw biological processes as fundamental, where as William James based his ideas on a psychological model (Rescher:3). Sheldon, like Whitehead, took physics as fundamental, but rather electromagnetism than quantum theory. Another difference is that while Whitehead articulated his theories in strict scientific terms, others – like Bergson – relied on intuitive reflection.

If anything particular in common to all the early 20<sup>th</sup> century process philosophers, it is their relationship to evolutionary Darwinism, which had emerged as a fundamental scientific and philosophical revolution at the time<sup>2</sup>. Process philosophy, in particular the Whiteheadian and the Bergsonian versions, represent attempted solutions to the theological challenges associated with the unification of natural evolution with the creative role of God – in which a process view of human experience with “creation” provided an attractive new set of propositions. All of them also tend to stress the primacy of activity over passivity and that factors such as change, creativity, innovation, time and so forth are basic to our understanding of the world.

## **Whitehead's metaphysics of creativity in historical perspective**

Whitehead stands out as the most influential representative of Process Philosophy. I will now give some considerations to the work of Whitehead on the basis of an historical perspective on his work.

First of all, I think it is fairly clear that we need to understand Whitehead within his own historical and philosophical context in order to make sense of what kind of issues his theories were struggling to solve. This is of course not an easy task, in part because there are different interpretations of Whitehead's philosophy represented among philosophers. In the following I mainly draw from a brief presentation offered by Ivor Leclerc (1990). Furthermore, such an understanding also requires an account of the foundations of the entire modern development of philosophy, where even a brief outline requires some space to elaborate. (For other historical accounts, see for instance Ford 1984, Wolf-Gazo 1990, Lowe 1981).

Rather than the claim for a linear line of dominance within western thought all the way back to the ancient Greeks as advocated by some, the route is probably better seen as one of occasional major shifts. One of these is represented by the rise of modern science and philosophy in rejection to traditional natural science and philosophy as represented by Aristotelian scholasticism. It emerged on a basis of what is commonly denoted “neoplatonism” that grew out of the fifteenth century through Augustine and Descartes and coming to dominate in the sciences of the seventeenth century.

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<sup>2</sup> Evolutionary biology has of course had a tremendous impact also on areas like in Organisational Theory (for instance in the Freeman and Hannan (1977) tradition) as well as within Economics

The basic ontological doctrine of neoplatonism is that what “is” must be immutable, which in the strictest sense was represented by the existence of God. However, since abstract representations of real entities were also seen as changeless in themselves, they too were considered “beings” in this strict sense. In the traditional platonian view, forms in enaction constituted “soul” (thoughts), which entails that souls too were considered “beings”. However, in this traditional view these “souls” were seen as being the principals of agency embodied in the physical as their acting rationales rather than “beings” in themselves. “Souls” as abstract representations did not have a separate existence separated from the physical. In the new neoplatonic doctrine this idea of embodiment disappeared. All change (becoming) now pertained strictly to the physical, to the realm of nature, maintaining a strict distinction between the acting agency of the soul on the one hand, and the becoming of the physical on the other (Leclerc 1990: 2).

This considerable modification that came to be introduced in the seventeenth century centered on a new interpretation of “matter”. In the classical view, matter referred to the physical as the recipient of “form”, and was having an ontological status that was contrary to that of form, namely that of “not-being”. This interpretation changed into an understanding where the physical was seen as constituted by matter alone – as opposed to the classical conception of the physical as composite of both form and matter. From now on, matter alone constituted “being” in terms of everything physical, where as the classical understanding of “form” evaporated. This turn is what constituted a distinct and gradually dominant “substance view” of the world.

Descartes was the first to appreciate the philosophical implications of this new theory of nature. Matter had become an ultimate. It was simply matter, being everywhere the same and thereby incapable of changing into anything else. Matter had become the ultimate “being” as opposed to its previous “not-being” status. Descartes also noted that qualitative categories no longer had any meaning in relation to matter. Hence, the category of quantity remained as the only relevant – due to matter’s extension in space. This permitted for the dominant role Descartes then gave to mathematics in the philosophy of nature. Descartes further recognized that the logical implication of this was a metaphysical duality of two separate “worlds of beings”. In addition to the physical, there is the one constituted by souls (thinking, intellect). This metaphysical dualism profoundly affected subsequent philosophy, represented a complete breach with the traditional view of “soul” as an active force included in physical nature, representing the principle of life, of emotion and of agency. The physical had become passive – without any capacity to influence. Only “soul” was active. On the other hand, “soul” had lost all of its associations apart from the activity of “thinking” (intelligence) (ibid: 4).

All this carried through into subsequent philosophy through Locke, Hume and Kant, where it came to represent the foundation for both empiricism and rationalism in the 19<sup>th</sup> century, which later came to represent taken for granted presuppositions to late 19<sup>th</sup> and early 20<sup>th</sup> century process philosophers. It was this inheritance Whitehead gradually opposed to, in comparison to which he finally came to represent a renewal of metaphysical philosophy presented for the first time in his Gifford Lectures at Edinburgh University in June 1928, published in “Process and Reality” the year after (Lowe, 1984).

In doing this he embarked on a theory of an indefinite plurality of ultimate beings that he termed “actual entities”, inspired by both quantum theory in physics, evolutionary biology and Leibnitz’ theory of “nomads”. However, where as “nomads” were conceived of as neoplatonic souls, Whitehead’s entities are not souls, but are rather bipolar conceptions of both physical and mental content - fundamentally similar to the Aristotelian view<sup>3</sup>. Whitehead maintained - as did Aristotle - that the physical must be understood as “in a process of becoming”, which entailed that the physical must be “acting”. This acting at the level of ontology, he denoted “prehending”.

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<sup>3</sup> As demonstrated by Felt(1985), Whitehead actually misinterpreted the Aristotelian conception of “substance” (Ousia), thereby causing some ambiguity on the side of Whitehead as to the interpretation of Aristotelian process thinking.

Whitehead made a distinction between two kinds of acting; physical acting (physical prehending) and mental (conceptual) acting (mental prehending). Physical acting is conceived to be the acting of actual entities in reference to one or more other actual entities. Mental or conceptual acting however, is the acting of an actual entity with reference to “eternal objects”. In the neoplatonian view, soul is “pure action”, which is to say that it can not be “acted upon” by other souls, which constitutes a purely subjectivist foundation for knowledge of data. Whitehead, on the contrary, maintained a necessary objectivism as to his data, which he argued represent a necessary foundation for any claim to “scientific knowledge”.

He explains his position on this in *Adventures of Ideas* where he points out that “for an actual entity to be an “object” (data) for an interpreter, necessitates the data being “given”, which means that it is antecedent to the interpretation, affirming that “thus an object must be a thing received, and must neither be a *mode* of reception or a thing *generated* in that occasion (ibid: 8, Whitehead 1933: 229). He clearly perceived of this “receiving” of the object of study not as a passive situation, but one in which the data were also “acting” on the observer/interpreter. This situation is what he referred to as “creativity”, in which the emergence of a new reality results from the interactivity of the actual world with the new in the actual act of creating the new. This is what is essentially contained in his notion of “physical acting” and the “continuity of physical activity”.

Whitehead’s notion “prehension” can more precisely be understood as “interacting”, and physical prehension can better be understood as “interactions among actual entities”. This can be compared with his notion of “mental prehension” or “conceptual prehension” in which data are “eternal objects” (conceptual abstractions). Whitehead held that the pure mental or conceptual prehension is an autonomous act. It is not a “being acted upon” like physical prehension. It is a mental “grasping” or “conceiving” of the “forms” in abstraction as derived from their physical determination of actual entities.

He furthermore denoted this derivation a “conceptual valuation”, which he then distinguished from another autonomous kind of mental act denoted “conceptual reversion”. The latter is the conceiving of form which is “reverse” or “opposite” or “contrary” to that of conceptual valuation. It is by the power of “conceptual reversion” that possibilities divergent from those derived from the data become accessible, which provides the basis for explaining the concept of “imagination”. Mental prehension is thereby not constrained by time and space, where as physical prehension is.

Whitehead refers to mental acting and physical acting as differences in kind, and does not ascribe to mental acting any independent ontological status, as did neoplatonism. He held that the actual entities that have ontological status, require both kinds since both are needed for the understanding of nature, and neither is reducible to or derivable from the other. Hence, conceptions created by mindful thought must interact with “influential” data of whatever physically exists in time-space, in order for there to be any understanding of what is. The “influence” capability of such “data” results from the complex and interconnected creative mental and physical interactions given in their “processes of becoming”. In line with this, the his pointing at “the fallacy of misplaced concreteness” refers to the tendency to claim knowledge about objects in the real world simply by deductions from what is contained in the autonomous acts of mental reflection.

## Whitehead's epistemology as opposed to epistemology of historical rationalism and empiricism

On the basis of this ontological theory, Whitehead developed an epistemology that evaded severe difficulties in the epistemologies of historical empiricism and rationalism, namely the problem of the knowledge of nature. This problem had been a primary concern to historical empiricism. On the basis of the neoplatonian ontology, sensuous perception is purely a mental act, an autonomous act of the mind. In the mind this gave rise to "ideas" of sensation in terms of "qualities" that referred to the mind alone, not to material things (matter). Hence these "sensuous ideas" were essentially "universals" that could not be seen as particulars within the world of ordinary things. In the historical empiricist theory there is accordingly no basis for any direct knowledge of physical things other than by inference, which led Lock to maintain that valid inference is possible, where as Hume did not, holding that there could not be genuine knowledge of nature – only a "probability" of such. (Leclerc, 1990:11)

Core to Whitehead's rejection of both the empiricist and the rationalist positions, was his view on two particular characteristics of traditional thinking; the idea of genuine knowledge as necessarily "intuitive", and the idea of knowledge as necessarily "certain". The conception of knowledge as "intuitive" derives from Plato's *noesis* of the forms. This corresponded with the neoplatonic doctrine of the soul and was essential to Descartes claim that knowledge is essentially "mathematical" - as the foremost example of knowledge as intuitive. The conception of "certain" is also taken from Plato, but changed significantly as a result of the neoplatonian interpretation. Plato held that knowledge per se was "true" and thus "not false". This however, is significantly different from "certainty" because "certainty" rather refers to the thinking subject than to the definition of true knowledge per se. Descartes required this "feeling of certainty" on the side of the (subjective) thinker, as the authorization of authentic "knowledge". This idea was then accepted by later thinkers of both rationalistic and empiricist orientation. To this Whitehead argued that we cannot know "what a thing is" by merely thinking of mathematical patterns or equations. On the contrary Whitehead insisted that empirical investigation is required for us to have knowledge of what is. Hence, Whitehead rejected both the conception that knowledge is "intuitive" in this sense, and the idea that knowledge necessarily had to be "certain" (ibid:12-13).

Whitehead accordingly maintained that genuine knowledge of nature necessitates the perception of physical entities. This however, required a different analysis of perception than that of the empiricists. Firstly, he rejected the presupposition of traditional thinking that vivid sensuous perception has the status of ultimacy (certainty required ultimacy). He held that perception is part of the physical and mental actings of actual entities and hence cannot be ultimate, but rather may change along with new actings. He argued that the first requirement is to admit that there is a physical "acting" (or influence) by the perceived actualities on to the interpreter. This physical interacting does not alone constitute perception. So, the second requirement is that perception also requires mental acting by the interpreter. Knowledge accordingly, requires interacting between pure mental acting and physical interacting, an integration, or synthesis, of the conceptual and the physical.

This integration of mental acting and physical interaction is what constitutes a "proposition". This comes about as follows: Mental prehension refers to conceptions representing abstract potentiality, meaning they have a completely general reference to any actual entity. In a proposition, there is no such generality, as the mentally conceived conception is integrated with a particular actual entity (or several) physically received. Some particular mental conception is being "proposed" as the hypothetical definiteness for those actual entities. Given the distinction between conceptual valuations and conceptual reversion, the number of possible "proposals" is unlimited. This propositional integration, according to Whitehead, is the basis for all perception based knowledge of nature. That is: Sensuous perception is not a direct intuition of physical things; it is a proposition about them. All thought related to the actualities of the world, must necessarily be propositional – or theoretical (ibid:15).

Through out the history of modern science, the view that scientific investigation and knowledge proceed by the method of hypothesis, propositions and hence "theory" has been gradually accepted,

and also that perception of the empirical is related to analytical conceptions of mind. Whitehead's conclusion that scientific knowledge per se is "propositional" or "theory" is also generally accepted. It was the lack of adequate philosophical basis for this doctrine that was Whitehead's concern, not that any of the scientific activities within the empirical sciences at the time was not in conformity with his theory.

### **Whitehead's relational theory of becoming - in relation to IMP business interactions**

From this brief outline of Whitehead's process philosophy, we may conclude that his theory fundamentally describes a world that is relational and interactional. As such, it represents an effort to extend from a particular solution to the "mind-body relational problem", to a theory about the mind-world relationship with respect to evolution of knowledge as well as evolution of new physical and social creations in the world. If we were to translate the essence of this theory to a theory about the business world, a first suggestion would be to say that all business entities and activities are outcomes of creative mind-world interacting processes and that they are both internally and externally related. As such this emphasis on "relations" and "interactions" corresponds to the fundamental analytical point of departure in business interaction theory such as represented by the IMP tradition. The focus on "creative processes of becoming" however, does not have any clear correspondence in the IMP tradition, which has rather tended to extend the notions of "relatedness" and "interaction" further into a theory about "interdependencies".

Whitehead's theory of creativity has rather been brought forward by scholars such as Bruno Latour and Michelle Callon within Actor-Network Theory, which represents a deliberate effort to create analytical constructs for empirical studies of "processes of becoming" (Harmann, 2009). Bruno Latour, in his book "We have never been modern", has indeed spelled out a philosophical underpinning of ANT that is very similar to (and obviously inspired from) Whitehead's interrelated ontology and epistemology presented above, by defining entities in their processes of becoming as "entities with variable ontology" that are combinations of social (included mental) and natural elements (Latour, 1991). Hence, Latour's introduction of the concept of "an actant" could definitely be interpreted as a notion that precisely describes a Whiteheadian "interrelated mind-world creation". The ANT tradition, in this sense, could be seen as the outcome of a lot of work to translate Whiteheadian as well as other process theories into a methodological theory for ethnographic science and technology case studies. From there the tradition has later expanded into areas such as innovation studies, market studies etc.

In the perspective of IMP, replication of ANT's methodological theory for studies of "processes of becoming" does not make much sense – as the alternative of course is to use ANT as it is where it can be productively applied to business interaction studies. To the IMP, it would be more interesting to explore how (elements of) process philosophy might be translated directly into business studies, by addressing the issues that IMP is striving to investigate and theorize in relation to "the meaning of business interactive process". With this ambition in mind, I would like to expand on this by directly relating elements of Whitehead's relational theory of creativity to the IMP's need to deal with business developments in the context of interrelated, interdependent interactions over time.

## **Mental interactions and the functional role of “management” in business landscapes**

If we extend from Whitehead’s bipolar model of mind-world creative interaction to the business world, we may suggest that the “mental acting pole” in his theory corresponds to the functional role of “management”. We may further suggest that the “physical acting pole” corresponds to the flows of other business world entities with which “management” engages to advance business projects; the constant evolution of entities in the processes of their becoming, their expansions, their interactions and their transformations of nature and society. Hence, all business projects may be interpreted as being in their processes of becoming through interactions between “management” and already existing and interacting business entities. In the IMP perspective, a simplification of this broad representation would be to represent it by the business networks that are made of “activities, resources and actors” (the ARA-model), which is a major output of IMP interpretation of what the business world is made of. An IMP version of a “creative theory of the becoming of innovations in relation to human experience” may as a point of departure, be represented by a combination of the ARA-model with a functional role of management that is associated as “the mental pole” in Whitehead’s bipolar model.

If “management” is to correspond to “mental (conceptual) acting, it implies that the core functional role of management must refer to the acting of an actual entity with reference to “conceptions of mind”. These conceptions are analytical constructs that results from the mental capacity of the brain to concentrate on particular aspects derived from in between the constant flows of complexities surrounding us. They are radical simplifications representing particularities in focus that may be explored, discussed, adjusted and recreated simply as imaginative activities within the brain. These simplifications may be “frozen” over time to represent at least semi-stable mental entities that may be moved, connected to other particulars or other analytical conceptions, discussed, rejected, etc. These conceptions may furthermore be stabilized by turning them into more stable entities such as written documents, computer files, notes, pictures etc. Mental acting by “managers”, in this sense, is representing a fundamental kind of activity in relation to any kind of innovation or business development process. Mental abstractions, simplifications, stabilization of particular interactions, creative mental reversions and other purely mental creative activities represent “the mental pole” that we generally associate with the role of management (included inventors, entrepreneurs, innovators) in the context of business.

The idea that business networks, as represented by the ARA-model, are acting entities that have important effects in their own respect, is completely consistent with IMP theories. In this sense, ARA-networks can obviously be analytically associated with the essential properties that Whitehead associates with the “physical acting pole”. A Whitehead inspired IMP theory of creative processes at the ontological level, would result from the interactions of this kind of management with this kind of business networks, in which the simplifying, stabilizing and formative mentally derived activities by particular managers interacts with the particular business networks in their actual business landscapes as represented by their heterogeneous resources, activities and actors. To investigate into creative processes of becoming of business activities, this model would recommend concentrating on interpreting the interactions of particular managers with particular already existing business networks in their mutual efforts to create new or expanded business activities.

## **Epistemological interpretation of creative business processes**

At the level of epistemology, Whitehead's theory suggests that managers are also interpreters of knowledge that advance their objective knowledge through creative developments of propositions (theory) about particular correspondences between entities in the business world and their mental representations in management theory. Hence, business development processes cannot be separated from knowledge processes as theory development processes with which business development processes interact.

If business networks as represented by the ARA-model correspond to "physical acting" in Whitehead's theory, it must imply that the interpreter in each and every case is forced to define his/her point of observation at the conjunction of a particular representation of "management" and a corresponding representation of business network ("ARA") objects. This follows because "ARA" obviously also represent a variety of other "management" entities. To address these in their belonging to "the mental pole", the interpreter will have to move his point of observation to explicitly place these other "managers" in that role within the bi-polar analytical model. For each such "moving around" there will be a different interactive process to be interpreted.

## **Possible applications**

An IMP theory of creative processes would potentially be useful for analysis of such phenomena as "commercial innovations", "the emergence of new market systems", "the transformation of established business networks", "the emergence of new business forms" and "value creation processes". Just like IMP, process philosophy represents an analytical position which takes relations and interactivity as the major prerequisite for building an analytical interpretation of the world. As such, it is directly opposed to the atomist view that is fundamental to neoclassical economics, which also represents the opposite analytical position to IMP's core as an economic theory. Because economic value in the IMP tradition, is fundamentally associated with the qualitative characteristics of the relationships between heterogeneous resources, activities and actors, the essence of value creation is directly associated with efforts to improve conceptual representations of these interrelations and the efforts to engage these entities in creative processes for enhanced value creation in correspondence with the new analytical conceptions.

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