

John Dewey, Lloyd Morgan and the Advent of a Pragmatico-Emergentist Naturalism[#]

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“Is it possible to avoid the sharp distinctions we used to make in the past between nature, life and spirit, and yet admit specific differences within the boundaries of something that will have the nature of a common matrix?”
(Sellars, 1933, p. 312. Our translation from the French)

Introduction – The pragmatico-emergentist creed

The quotation provided here as an opening inscription adequately captures the essential question that lies at the very heart of both pragmatic and emergentist views of nature. Sellars’ question might be rephrased as follows: is it possible to develop a philosophy of nature that simultaneously rejects *metaphysical dichotomy* (Sellars’ ‘sharp distinctions’) and *pure identity* (Sellars’ admittance of ‘specific differences’) between phenomena such as physical, vital and mental processes? Both pragmatists and emergentists used to claim – and still claim today – that it is. Since the advent of their doctrine at the beginning of the last century, they have indeed been committed to the idea that emergent phenomena are neither broken off from their constitutive and underlying processes, nor are they purely identical to them¹. In other words, both pragmatists and emergentists maintain a view that holds together the two following and seemingly contradictory theses: (1) complex phenomena – such as life and mind – are *continuous* with the underlying processes from which they emerge (an

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¹ To take some examples among many, one can illustrate this commitment by quoting the early pragmatist John Dewey: “There is neither a sudden jump from the merely organic to the intellectual, nor is there complete assimilation of the later to primitive modes of the former.” (Dewey, 1929, p. 220), and the early British emergentist Samuel Alexander: “Mind and mental process are vital but not merely vital” (Alexander, 1927 [1920], p. 8) or “Life is at once a physico-chemical complex and is not merely physical and chemical” (*Ibid.*, p. 46).

emergent whole is merely composed of its underlying parts); (2) complex phenomena are ‘autonomous’ or they exhibit ‘genuine novelty’ – so they are somehow *discontinuous* with regard to their basis of emergence (an emergent whole is “more than the sum of its parts”). By being committed to the thesis of continuity, pragmatists and emergentists are essentially *naturalists* [no ontological gap or dichotomy in nature, coherently with the belaboured maxim: “*Natura non facit saltum*”]; by being committed to the existence of a kind of discontinuity in the advent of complex phenomena, pragmatists and emergentists are also *antireductionists* [no pure identity between – for instance – vital and physical processes]. This constitutive tension of both pragmatism and emergentism – holding at the same time the thesis of continuity and discontinuity – is adequately captured by what one might call here the ‘pragmatico-emergentist creed’, which constitutes the very hallmark of the doctrine in whatever version it presents itself: “Neither metaphysical dichotomy nor pure identity”.

Adopting a position between such antithetical views – and consequently satisfying the pragmatico-emergentist creed – is not, however, an easy exercise. How is it possible for emergent phenomena to be continuous *and* discontinuous with their underlying physico-chemical entities? Is this not simply a blatant contradiction? Showing that pragmatists (like John Dewey) and emergentists (like Samuel Alexander and Lloyd Morgan) nevertheless consistently satisfy the pragmatico-emergentist creed will lead us to a corollary objective, which consists in evaluating the thesis that pragmatism and emergentism share (i) a common cosmology, *evolutionary naturalism* – and, more generally, (ii) a common natural ontology, *non-reductive materialism*. The way we will assess the theses (i) and (ii) to be true or false will naturally lead us to elucidate the common grounds and the main (philosophical) divergences between early pragmatists and emergentists, and then to make sense of views according to which – for instance – “John Dewey was an emergentist” (cf. for instance Pihlström, 2007; and Steiner, 2008).

1. The advent of a new naturalism

It is well known that science has been deeply transformed during the 19th century and – among the numerous developments and discoveries that are parts of such a transformation – the Darwinian theory of evolution by natural selection certainly occupies a preeminent place. Not only has this theory radically changed the life sciences but it has also brought about, at the turn of the 20th century, an important movement within natural philosophy itself, from what we may call here an ‘old-style naturalism’ – partly inherited from the antique and

essentialist world view of the Greeks – to the advent of a ‘new naturalism’ – that may be distinguished from the former with regard to the way it deals with the issue of the coming into being of *genuine novelty* in nature.

In order to characterise this new form of naturalism that arose from the influence of evolutionary thought within philosophy, it may be helpful to previously describe the core ideas of the Darwinian naturalism implicit in the *Origin of Species*. Such naturalism is committed to the following thesis (Blitz, 1990):

- [*Continuism*]: the biological evolution proceeds without leaps or breaches in continuity.
- [*Gradualism*]: biological changes occur almost imperceptibly by a slow accumulation of infinitesimal movements on very large time scales.
- [*Quantitativism*]: biological changes are changes in quantity (shape, size, *etc*), not in quality.

In addition to these theses that constitute the main characteristics of the Darwinian naturalism, one may say that the general ontology that Darwin is committed to consists in a form of reductive materialism, that is to say, the thesis according to which the unique and ultimate “stuff” of (natural) reality – to which every phenomenon reduces – consists in material particles.

This very concise description of Darwin’s implicit naturalism (and materialism) usually raises an immediate and intuitive question – that was already the subject of debates among the growing community of evolutionists after 1859²: how is it possible for a purely *continuous, gradual* and *quantitative* process to give birth to what appears to be a *qualitative* diversity in nature (of which a very sensitive exemplification consists in the observed fact that some living organisms have a mind whereas other do not)? In other words: how evolution – a process that only allows difference in *degree* – may give rise to (what seems to constitute) differences in *kind*? Such question may be used here as a demarcation criterion between what we call the ‘Darwinian naturalism’ and the ‘new form of naturalism’³: the latter vindicates a

² Such question was already raised, for example, by Thomas Henry Huxley – who by the way was the mentor of the emergentist Lloyd Morgan – in his review of Darwin’s *Origin of Species* (Huxley, 1893) that was first published in the *London Times* in 1860.

³ By these expressions we do not intend to say that Darwin’s naturalism is simply equivalent to the antique naturalism of the Greeks (it is not). We just want to highlight the fact that the proponents of the so-called “new

view according to which evolution is somehow *creative* and is consequently the place of *genuine novelties* (the mind, for instance) whereas the former reduces to eliminativism (the differences in kind just are illusory). Another way to capture the distinction between the ‘old-style naturalism’ and the ‘new naturalism’ consists in asserting that the later is a (diachronic) *non-reductive* kind of naturalism – according to which there is no genuine novelty in evolution – whereas the former is a *reductive* kind of naturalism – according to which there isn’t any genuine novelty in evolution (because the result of every biological transformation is already ‘implicit’ in the conditions of its appearance).

With such a distinction in mind, the question we now want to tackle is whether emergentism and pragmatism may be respectively considered as particular forms of this ‘new (non-reductive) naturalism’? In order to answer to this question, we primarily describe the core ideas of two preeminent representatives of these philosophies: Lloyd Morgan and John Dewey.

2. The emergent evolutionism of Lloyd Morgan

Conwy Lloyd Morgan (1852-1936), a British biologist (and psychologist) turned philosopher in his old days, vindicated a version of naturalism that may be called interchangeably ‘emergent evolutionism’ or ‘evolutionary naturalism’⁴. Since this particular form of naturalism rests essentially on the concept of *emergence*, it may be helpful to concisely characterise this notion.

For this purpose, one may use the following toy example (Montague, 1929): heating liquid water to a certain degree may lead water to vaporise. If one considers the result of this process – gaseous water – as emergent, one wants to capture two (seemingly contradictory) ideas. On the one hand, the property of being gaseous is fully *determined* by its conditions of appearance; it is not disconnected from them (so if we repeat the experiment in the exact same conditions, we expect water to behave in exactly the same way). On the other hand, the property of being gaseous is also *irreducible* to its conditions of appearance, *i.e.* it would have been impossible to theoretically predict the outcome of the experiment (the appearance of gaseous water) from a complete knowledge of the initial conditions (when water was still

naturalism” usually assert that Darwin’s view is still too highly influenced by the Greek’s legacy (cf. for instance Sellars, 1922, p. 320).

⁴ While the first term is from Lloyd Morgan himself (Morgan, 1923), the second comes from the American philosopher Roy Wood Sellars (Sellars, 1922). In the afterword of his *Emergent Evolution*, Morgan acknowledges himself that the two expressions may be considered as equivalent.

liquid). In this respect, ‘being gaseous’ is an emergent property of the water sample; it consists in a genuine qualitative novelty that did not exist – event ‘implicitly’ – within the conditions of its appearance. The concept of emergence then captures a twofold idea: (1) the vaporisation process of water is somehow *continuous* – the property of being gaseous is determined by a combination of underlying properties called the ‘basis of emergence’ – and (2) it is also *discontinuous* – because one cannot reduce the property of being gaseous to its basis of emergence⁵. To conclude this simple illustration, one can assert that, when water boils, there is an *emergent evolution* from liquid water to gaseous water.

By analogy, one may conceive the process of biological transformation through time as an *emergent evolution* during which new properties, qualities or entities (like the mind) regularly emerge. Emergent evolution is then to be understood as a kind of ‘third way’ between a purely *gradualist* and *continuous* evolution (Darwin) and a *saltationist* and *discontinuous* evolution (Huxley). It allows the regular advent of *qualitative discontinuities* (genuine novelties or emergent) in a *continuous* process, and do consequently make sense of the pragmatico-emergentist creed: “Neither metaphysical dichotomy nor pure identity”. In this respect, Morgan’s view of evolution constitutes a form of what we called ‘new naturalism’; it constitutes a conciliation between *naturalism* (“*natura non facit saltum*”) and *antireductionism* (genuine novelties may arise in the evolutionary process).

Before we turn to John Dewey, it may be interesting to mention briefly one important presupposition of Morgan’s philosophy, because it will help us during our conclusion to emphasise a contrast between emergentism and pragmatism. Morgan’s emergentism – as well as the emergentism defended by philosophers, such as Samuel Alexander or Charlie Broad – essentially rests on a holistic or hierarchical view of the natural world. According to Morgan, it is indeed possible to classify every natural entity into a pyramidal scheme – scheme he calls himself, following Alexander, the ‘synoptic pyramid’ (Morgan, 1923, p. 11; cf. fig. 1) – that is isomorphic to the structure of reality. Each level in this hierarchical picture consists in the advent of a peculiar emergent:

⁵ The concept of reduction consists here – in the case of Morgan’s philosophy – in a form of radical unpredictability or – equivalently – in the idea of genuine novelty. This interpretation of reduction is quite different from what it is today.

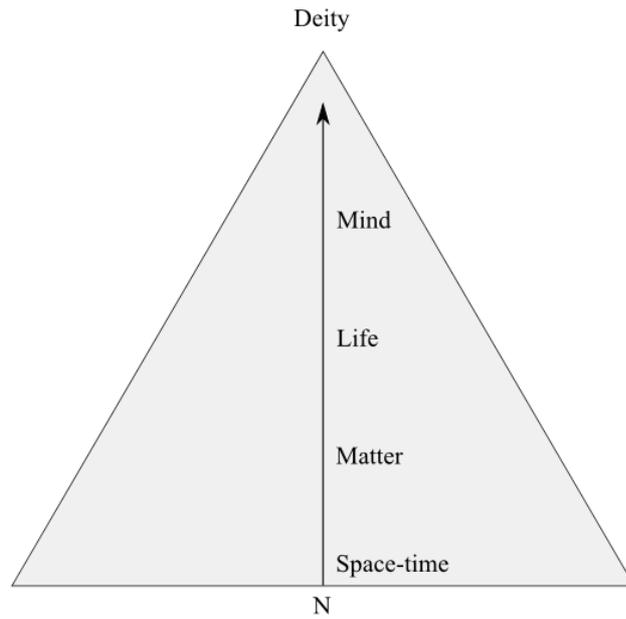


Fig. 1 – Morgan’s “synoptic pyramid”.
Only the ‘main stages’ of evolution are represented here.

With regard to this view of nature and of evolution, an important distinction has to be stressed:

- On the one hand, one may say that the evolutionary emergentists such as Morgan share a *progressive* (or teleological) view of evolution. Even if a kind of Cartesian substance dualism is rejected, humans remain on the pinnacle of the natural world, as the *ens perfectissimum* of the evolutionary process.
- On the other hand, Darwinian evolutionists are essentially *non progressive*. There is no natural (nor metaphysical) tendency that pushes vital forms towards a putative end like having a mind (Morgan) or deity (Alexander). As an image of natural evolution, they would certainly prefer a luxuriant tree with humans occupying a peripheral branch.

Despite his ‘emergentism’, it is this second branch of the distinction that pragmatist John Dewey will support⁶ though he will never adhere to the reductionism of Darwinian naturalists (because of his conception of emergence).

⁶ Even if the ‘humanism’ of John Dewey can be characterized as a ‘meliorism’ (because of his faith in political, moral, technical and scientific progress of man related to education and intelligence), his

3. The antireductionist naturalism of John Dewey: a different use of emergence

Founder of the Chicago school, John Dewey (1859-1952) is one of the first philosophers – along with C.S. Pierce and William James – who contributed to the development of Pragmatism in the United States. Well known among pragmatists, the intellectual conversion of John Dewey to naturalism (instead of Hegelian idealism) after his discovery of Darwinian theory led him to abandon in *The influence of Darwin in Philosophy* (1910) metaphysical thought as a philosophical consequence of Darwinism. Dewey developed a naturalistic conception of knowledge, the universe and the human being (Deledalle, 1998). But whilst reinstating mind in nature and restoring continuity between the natural sciences and humanities were essential concerns of Dewey, the naturalism he built is similar to Lloyd Morgan ‘Emergent evolutionism’ in the sense that it does not consent either to reductionist Darwinian naturalism (*pure* quantitativism, gradualism and eliminativism). Nature is the matrix of both quantitative and irreducible qualitative experiences (Dewey, 2012).

If he (in part) owes for instance to Darwinism the origin of his non-metaphysical but naturalist philosophy of mind (Dewey, 1997), it is in the same time (in part, too) against the Darwinian naturalism that he develops his functionalism by defending the irreducibility of mind to the brain structure and moreover to the totality of its physical conditions. Far from subscribing to the potential eliminativism of Darwinian naturalism, Dewey considers the formation of human mind as a genuine process emerging naturally in human social life. In *Experience and Nature* which constitutes a synthesis of Deweyan naturalism, Dewey does not hesitate to describe mind as the appearance of a genuine qualitative novelty in nature, characterising his philosophy of mind as “an attempt to contribute to what has been called an ‘emergentist’ theory of mind”⁷.

Nevertheless by using the concept of ‘emergence’ within the framework of his ‘empirical naturalism’, Dewey transforms the meaning it takes on in the ‘Emergent evolutionism’ of Lloyd Morgan. Two differences at the origin of this philosophical divergence between the pragmatist Dewey and emergentists of his time (Morgan, Alexander) have to be succinctly pointed out:

‘humanist progressionism’ (See Deledalle, 1998, pp. 167-173.) can in no way be extended to the entire of his naturalism (see Dewey 1997, 2012). Deweyan ‘meliorism’ is internalist (it is a rational interpretation of human development from a human perspective), local (limited to human being) and empirical (exposed to potential regressions). It is not at all a cosmological or teleological position - from a metaphysical position.

⁷ See Dewey, 2012, p. 261.

- (1) Emergentists such as Morgan (Alexander, Broad) develop a realistic and progressive (or teleological) view of evolution within the context of their new naturalism. By contrast the Chicago School founder clearly defends in *The influence of Darwin on Philosophy* (1910) a non-finalist conception of nature in which emergents cannot be ranked in an objective hierarchical order. This position results from his rejection of the influential framework of a teleological scale of beings inherited from the classical metaphysics, more specifically from the (pre-Darwinian) Aristotelian theory of forms and substances (Dewey, 1997).
- (2) The emergentist conception of emergence (that of the early emergentists Morgan or Alexander) remains affected by the classical ontology of forms and substances which is presupposed in a conception of nature according to which there exists a spontaneous tendency (a natural and ultimately metaphysical one) that leads to higher emergents, being the human mind (Morgan) or the quality of deity (Alexander). To some extent first emergentists try to set into motion (in an evolutionary way) the Aristotelian theory of forms in the context of the early 20th century⁸. The pragmatist theory of emergence of Dewey rather involves an ontology of relations (transactions) which clearly accentuates the importance of accidents, i.e. the role played by “events” and unpredictable connections in nature. This involves a different conception of emergence. Some examples may illustrate this :
- For Dewey, it is not water *as water* which acquires the emergent propriety of ‘being gaseous’. It is the connections (or transactional modalities) between water molecules *and* their environment which receive completely new qualitative proprieties.
 - In the same way, the emergence of life does not imply that living beings, considered individually, have something *more* than non-living beings. Their constitution is completely physico-chemical. But what distinguishes them from inorganic things rather lies in the way physico-chemical energies of living

⁸ First emergentists (Alexander, Morgan, Broad) rediscovered an assumption firstly suggested by the aristotelician theory of natural forms according to which the unity of a totality (the inner mode of organization) cannot be obtained by the pure addition of its parts (its material components). The most classical maxim of emergence : “ The whole is more than the addition of its parts” is indeed often attributed to Aristotle, for instance in *Metaphysics* (1045a) : “ In all thing which have a plurality of parts, and which are not a total aggregate but a whole of some sort distinct from the parts, there is some cause...” (Aristotle, 2001). For further analysis of the philosophical origins and implications of the theory of emergence, see Kim, 2006.

beings are interconnected and function in a specific ‘co-constitutive mode of relation’ with their environment which differs from the kind of relation inorganic entities have with their natural context of existence (Dewey, 2012, p.236.).

- Lastly, nor is human mind something more (an entity or a quality) which comes upon a living (human) being once it has reached a certain level of organizational (brain or somatic) complexity. For Dewey, it refers rather to a dynamic process of contextual transactions entailing social and language practices in which human beings take part. This context defined as culture and qualitatively built by collective meanings and reflexive relations is the genuine ‘kingdom of the mind’.

Instead of referring any basis of emergence of qualitative novelties (such as life or mind) to the development of ontologically ‘separate’ totalities (whose emergents cannot be deduced from the proprieties of all the different parts), the non-reductive naturalism of John Dewey views them in the ‘functional’ and ‘co-constitutive’ transactions of beings between them and their natural environment. The ‘relative transcendence’ of emergents (their irreducibility) in relation to their material conditions – for example that of mind compared to its cerebral conditions – cannot be essentially related to individual developments becoming more and more complex (following a certain cosmological teleology) until the achievement of certain thresholds of emergence. Because the categories of relations and events take precedence over that of substance⁹, emergents do not ‘result’ from ‘separate organizations’ but rather from modifications both of the conditions of transactions between beings and their environments and these transactions themselves. By producing new configurations of connections, contextual and multifactorial changes allow the advent of new emergents.

Conclusion – a common evolutionary naturalism, a different ontology

The question we wanted to tackle was the following: in which sense emergentism and pragmatism may be respectively considered as particular forms of the ‘new (non-reductive) naturalism’ we introduced to (1.) ? In order to answer this question, we have described and

⁹ Dewey relates his emphasis on the categories of relations and accidents as an implication of the success of modern sciences (both in physics and in biology with the darwinian theory). The latter highlighted to him aspects of experience that had been completely neglected by the “old style naturalism” (and pre-modern sciences). See Dewey, 1993, pp. 141-161.

compared the core ideas of two pre-eminent representatives of these philosophies, Lloyd Morgan and John Dewey.

Our study suggests that the use of the concept of emergence by Dewey acquires a different meaning compared to that of emergentist Morgan. While emergentists try to achieve a reinterpretation of the theory of forms in the evolutionary context of the early 20th century, Dewey developed an antireductionist naturalism known as ‘empirical naturalism’ within which the contextualism and transactionalism (influenced by Darwinian theory) he builds implies an ontology of relations as well as a non-finalist conception of nature. It follows an inevitably different interpretation of emergence as his philosophical presuppositions differ entirely from a hierarchical ontology of forms.

But even if they are ontologically and epistemologically dissimilar (early emergentists are more realists than Dewey), the emergentist Morgan and the pragmatist Dewey try nevertheless to reconcile (through the use of the word ‘emergence’ in two different ways) the apparently contradictory ideas that are, on one hand, the continuity (*natura non facit saltum*) of natural processes (differences in degrees) and, on the other hand, the creativity and innovative nature of natural evolution, i.e. the existence of qualitative discontinuities (differences in kinds). On one hand, emergents constitute (Morgan, Alexander, Broad) genuine philosophical problems: they suggest an irreducible hierarchy of levels of natural causality, from matter to Mind (Morgan). On the other hand, mind cannot be wholly explained by the limited etiology of a particular science (such as physics, biology or neurosciences) as it is seen by Dewey as a contextual and multi-relational process which requires the articulation of several scientific disciplines (all the latter but also social sciences and humanities) to be naturally explained. In that sense, early emergentists (Morgan, Alexander) and the pragmatist Dewey both contribute to the pragmatico-emergentist creed of a new non-reductive naturalism: “nor metaphysical dichotomy, nor pure identity”.

Although the order of priority differs between their ontology and their epistemology, or in spite of their different ontologies, the early emergentists and the pragmatist Dewey built a non-reductive evolutionary naturalism. As illustrated by certain contemporary researches in philosophy of nature (Clayton and Davies, 2006) or in cognitive sciences where the emergentist theory of John Dewey suggests to relocate mental phenomenon beyond brain processes (Steiner, 2008), the non non-reductive evolutionary naturalism to which pragmatists

and emergentists contribute to develop since the last century draws contemporary new promising scientific hypotheses about phenomena as complex as life or spirit in nature.

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