**Reality as Process. An outline of A. N. Whitehead’s metaphysics.**

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Typing the term “creativity” into *The Guardian* newspaper’s website yields over 43,300 results. On one day these can range from statements relating to “cinematic freedom and creativity”, “a creativity-driven educational model” and “Britain as a potential powerhouse of creativity”. My simple question is, given the wide range of fields within which this term is now used, do we really know what we are talking about when we invoke the notion of creativity? The animus for this question comes from what is perhaps the most surprising element of Whitehead’s deployment of the word “creativity”, namely that he coined this very term. This bears repeating. Prior to his use of the word “creativity” in *Religion in the Making* in 1926 (Whitehead, 1927 [1926]: 77), this word was not extant in the English language. “Creativity” is a term of Whitehead’s own devising. In 1925, in *Science and the Modern World* (Whitehead, 1932 [1925]), and a year or so before his first use of “creativity”, he instead used the term ‘*creativeness*’ (Whitehead, 1932 [1925]: 140. Emphasis in original). But it is only really in 1929 in *Process and Reality* (Whitehead, 1978 [1929] hereafter *PR*) that he fully adopts the term “creativity” as best expressing the mode, character and ubiquity of the role of novelty within existence. And it is this notion of novelty which is key. **[PPT]**

'“Creativity”' is the princi­ple of novelty. (Whitehead, *Process and Reality* [PR]: 21]

One of Whitehead’s abiding concerns was to develop a scheme of thought which would be able to encompass and account for new things, ideas, entities and processes being generated within existence. His background in mathematics and mathematical physics made him acutely aware that Western science and philosophy lacked the requisite conceptual tools to accurately describe the processes implicit in concepts such as those of evolution, energy, and the ‘wave-theory of matter’ (Whitehead, 1933: 200)

To his mind, modern science and philosophy were still wedded to and based upon stubborn conceptions of objects and subjects. They found it hard, if not impossible, to allow for new things, for novelty. As a result, discussions of process and novelty amounted to little more than wishful additions to a rigid conceptual framework. They lacked rigour and applicability. Whitehead, therefore, set himself the daunting task of elaborating a scheme which could genuinely describe how new things come to be. This is the role he assigns to creativity.

So, to start with I am going to look at what Whitehead meant by this term. As is often the case, Whitehead does not offer an explicit definition of his technical terms. It is only late on in *Process and Reality* that he comments on the etymology of the word when he states: **[PPT]**

‘In the abstract language here adopted for metap­hysical statement, “passing on” becomes ”creativity,” in the dictionary sense of the verb creare, “to bring forth, beget, produ­ce”' (PR 213).

I must admit that I was not aware of the verb “creare” in English, but I think the sense is clear. Creativity is to do with something being produced, brought forth, moving on. There is no celebration here. It is, for Whitehead, a fundamental characteristic of existence that it is not static; that objects are not fixed, that subjects are not given once and for all. So he needs to account for this lack of stasis; one important strand in this argument is the concept of creativity.

Note that this is a metaphysical task – Whitehead was not born a metaphysician (none of us are) – and his first work was in symbolic logic. Why did he end up feeling the need to indulge in metaphysics?

2) Whitehead was born in 1861 in Ramsgate, Kent, in the south of England. He went up to Trinity College, Cambridge, in 1880 where he remained as an undergraduate, fellow and senior lecturer until 1910; his field of interest at this time was pure and applied mathematics and he specialized in symbolic logic. During this time he collaborated with Bertrand Russell and together they wrote, over a number of years (1903-1910), the ground-breaking *Principia Mathematica*. In 1910 Whitehead left Cambridge and moved to London where he eventually took up a professorship at Imperial College, University of London. This period witnessed a shift in Whitehead’s interest toward mathematical physics and more especially the work of Einstein on relativity. The consequences of the notion of relativity for science, philosophy, history and the understanding of society and societies were an important and on-going concern of Whitehead. This is evident in both his direct discussion of Einstein’s theories in *The Principle of Relativity with applications to* *Physical Science* which he wrote in 1922 and in the later elaboration of his own version of the principle of relativity as fundamental to his philosophical approach which he termed “philosophy of organism” in his major 1929 work *Process and Reality* (PR).

Whitehead’s move to London led not only to an extension of his ideas to mathematical physics but also to the practicalities and purpose of universities and education in general. He took up high-ranking administrative positions in the Senate of the University of London and worked to open up the colleges and curriculum to both women and local communities (SP, 18-19). This interest in the role of education carried on throughout Whitehead’s life and culminated in the publication of his collection of essays *The Aims of Education* (AE). In 1924, at the age of 63, Whitehead was invited to another Cambridge, that of Massachusetts, USA, where he was asked to take up a professorship in philosophy at Harvard University. Here he worked until 1937 and it is during this period that he produced his most philosophical works, namely **[PPT]** *Science and the Modern World* (SMW), *Religion in the Making* (RM), *Symbolism. Its Meaning and Effect* (SYM), *Process and Reality* (PR), *Adventures of Ideas* (AI) and *Modes of Thought* (MT). It is sometimes reported that after giving his first lecture at Harvard, Whitehead commented that this was the first philosophy lecture that he had ever attended (e.g. Stengers 2008a, 100).

3) Why Metaphysics in the 1920s?

Metaphysics is the branch of philosophy which traditionally dealt with supposedly fundamental questions and first principles, but which required no reference to experience or to what might now be called “empirical evidence” to support its arguments. As a result in the early 20th century it had fallen into disrepute. Its link to medieval theology and the propensity of its arguments to indulge in apparently irrelevant debates, such as that of the number of angels which can fit on the head of a pin, led to its rejection by the cadre of modern philosophers, for example by the influential group set up in Vienna in the 1920s and 1930s, and known as the Vienna Circle, with members such as Rudolf Carnap, Otto Neurath, Karl Popper and Kurt Gödel. Their goal was to develop a “unified science”; to cut through the superficial differences and meaningless statements of various branches of thought and to ground these in their most fundamental terms which, in this view, were to be based on logical terms. With regard to making accurate statements within science, this would involve producing a system of language in which each statement and concept could be ultimately verified by recourse to some fact. In practical terms, such facts were ultimately to be based on an observable entity; hence this approach was termed “logical empiricism”. The main enemy was the ambiguity which seems to haunt everyday language. As Wittgenstein put it in his later work: **[PPT]** ‘Philosophy is a battle against the bewitchment of our intelligence by means of our language’ (Wittgenstein, 1988: 109). The Vienna Circle dismissed not only metaphysics but also aesthetics and ethics.[[1]](#footnote-1) Everyday language, statements about emotions, beauty, ethics and so on, were to be distrusted. Metaphysical discussions which went beyond observation were viewed as especially suspect, and were to be dismissed. Indeed, it was argued that there were no such things as genuine metaphysical problems. The task of philosophy was to clean up language, and hence clarify thought. This is a position which is set out boldly by **[PPT]** Rudolf Carnap in his essay written in 1932 – ‘The Elimination of Metaphysics Through Logical Analysis of Language’ (Carnap, 1959).

For Whitehead, ambiguity in language and *in the world* are not to be erased but need to be recognised and allowed for, enabled even. As Whitehead puts it, philosophy, if it is to be truly philosophical, needs to be able to account not only for matters of truth and falsehood, but also error, hesitation, imagination:

**[PPT]** ‘Unfortunately theories, under their name of “propositions,” have been handed over to logicians, who have countenanced the doctrine that their one function is to be judged as to their truth or falsehood’. **[PPT]** ‘Error is the price we pay for progress’ (Whitehead, 1978: 184, 187).

**[PPT]** ‘Philosophy may not neglect the multifariousness of the world the fairies dance, and Christ is nailed to the cross’ (PR 338).

**The Problem of “Primary Substance”**

Q. So, why does Whitehead return to metaphysics?

A. By showing how metaphysics still affects and infects our thoughts and language, he sees the need for developing a more modern, more robust metaphysical scheme.

For example:

To state that “this water has a temperature of 100 C” is to assign a specific property (temperature) to a specific entity (water). The water is the “subject” of the sentence, and temperature is “predicated” of it. Whitehead refers to this as the “subject-predicate” axis. **[PPT]**

‘For example consider the type of propositions such as “The grass is green,” and “The whale is big.” This subject‑predicate form of statement seems so simple, leading straight to a metaphysical first principle; and yet in these examples it conceals such com­plex, diverse meanings’ (Whitehead, 1978: 13). The assumption is that there are fixed entities to which changeable properties can be ascribed. According to Whitehead, there is a danger in taking the linguistic structure of the subject-predicate axis and assuming that it represents how the world actually *is*. This runs the risk of simplifying the diversity of existence by reducing all instances to the same logical structure, that of the subject-predicate axis:**[PPT]**  ‘the exclusive reliance on sense-perception promotes a false metaphysics’ (Whitehead, 1933: 281) as it assumes that beneath experience there is a fundamental ground which quietly subtends that experience. This establishes an erroneous, or problematic, viewpoint where it is the attributes of matter rather than matter itself which is presented to humans and from which knowledge is derived.

Whitehead traces this specific conflation of the organization of language, grammar and existence to the metaphysics and logic of Aristotle. On Whitehead’s reading, Aristotle takes the simplest form of sentences as indicating how the world really is (Whitehead, 1933: 169). Aristotle assumes that all existence is made up of something fixed and inert which has certain properties (“it is hot”, “it is cold”). He separates this “it” from its properties. Whitehead describes this “it” as alluding to what Aristotle termed “primary substance”. The properties of an object, and the words (most often adjectives) used to describe these, might change but somehow “it”, the object, remains the same. **[PPT]** ‘The unquestioned acceptance of the Aristotelian logic has led to an ingrained tendency to postulate a sub-stratum for whatever is disclosed in sense awareness, namely, to look below what we are aware of for the substance in the sense of the “concrete thing”’ (Whitehead, 1964: 18). The subject-predicate axis posits a ground which comprises utter reality and which exists separately from the perceptions, thoughts and conceptions of (human) subjects; it is modelled on the positing of a primary substance which subtends the qualities or characteristics that are attributed to it. This is manifest in the adjectives that are used to designate the properties, qualities or attributes which are predicated of a primary. Whitehead states that the influence of Aristotle is not only widespread but pernicious. **[PPT]** ‘The evil produced by Aristotelian “primary substance” is exactly this habit of metaphysical emphasis upon the “subject-predicate” form of propositions’ (Whitehead, 1978: 30). A gulf has been created between the world-as-it-is and information about the world-as-it-is. As Whitehead puts it: **[PPT]** ‘All modern epistemologies, all modern cosmologies, wrestle with this problem. There is, for their doctrine, a mysterious reality in the background, intrinsically unknowable by any direct intercourse’ (Whitehead, 1933: 170).

And this is where we find Kant with his noumena.

Such epistemological problems also haunts contemporary science. The “subject-predicate” axis may have been a workable hypothesis for the kind of “Newtonian science” that was undertaken from roughly the 17th to the end of the 19th century; for example, it works well when thinking about how the planets orbit the sun. However, Whitehead maintains that to think of the universe as only made up of such objects (planets, suns, moons) is a very specific, even limited, way of thinking. It might work on some occasions but is not a complete account. Contemporary science does not always study such objects; it now investigates energy, vibrations, waves. The concept of objects is not adequate to describe a universe “created” by a big bang, a universe which is replete with flows of energy. Moreover, some of the “particles” which contemporary physics has identified, such as photons, do not have any mass. Yet, Whitehead believes that scientists still often think in the old Aristotelian way and this hampers them. Scientists have not completely rid their language and thoughts of the idea that the world is fundamentally made up of objects. Whitehead puts this point boldly when he writes: **[PPT]** ‘in the present-day reconstruction of physics fragments of the Newtonian concepts are stubbornly retained. The result is to reduce modern physics to a sort of mystic chant over an unintelligible Universe’ (Whitehead, 1938:152). This is perhaps why there are such problems when thinking about the status of photons. Sometimes they appear to be particles (objects), sometimes they appear to be waveforms (not objects but vectors of energy). **[PPT]** ‘The story commences with the wave-theory of light and ends with the wave-theory of matter’ (Whitehead, 1933: 200).

**Philosophy, Science and Contemporary Thought**

It should be noted that, although Whitehead does not always make this clear in *Process and Reality* (PR), his argument is against Aristotle’s version of logic rather than against all of his metaphysics. His concern is the results that have accrued for philosophy, science and modern thought from the tacit adoption of Aristotle’s description of “primary substance”. But Whitehead also takes from Aristotle (and Plato) the need to construct a metaphysics. This is the task Whitehead sets himself in *Process and Reality* (1929 [1978]).

I will start with a re-cap as it sketches the plan and path of Whitehead’s philosophical challenge.

The basic problem (which Whitehead wants to resolve) is that any metaphysical scheme which divides existence up into objects and subjects (mind and bodies) the result is that: **[PPT]** ‘Each substantial thing is thus conceived as complete in itself, without reference to any other substantial thing’ (AI, 169). Descriptions of facticity thus amount to no more than a limited description of a supposedly individual point at an individual time. Each item becomes a solitary thing, an object, unrelated to any other. It is therefore impossible for information to pass between such objects. This position both denies, and is unable to account for, any notions of dynamism, fluency or process. Third, the splitting of existence into a primary substance which is distinct from those (human) subjects who experience or perceive such a substance also creates a gap between that which knows and that which is to be known.

5) Becoming/Passing on/Creativity

Whitehead turns to his notion of relativity which is a crucial and abiding element within his philosophy and which he describes as follows: **[PPT]**  ‘it belongs to the nature of a “being” that it is a potential for every “beco­ming.” This is the “principle of relativity”’ (PR, 22).

Whitehead’s envisages his principle of relativity as an important philosophical contribution which both accords with and extends elements of contemporary physics but also challenges accepted doctrines of individualized existence. [**PPT]**

The principle of universal relativity directly traverses Aristotle’s dictum, ”A substance is not present in a subject.” On the contrary, according to this principle an actual entity *is* present in other actual entities... The philosophy of organism is mainly devoted to the task of making clear the notion of ”being present in another entity.” (PR, 50. Emphasis in original.)

Each item of existence is the combination of elements that were previously diverse into a novel unity. This is a call to engage in a new form of investigation which recognizes the utterly constructed and inter-related aspects of all existence and the necessary embroiling of that which is commonly thought of as discrete, namely objects and subjects.

This adoption of relativity moves away from such a view and this is of vital importance as it allows for the concrete existence of actualities which do not rely on a common locus for their definition. That which links all entities is the manner in which they come to be, but this manner of coming-to-be is not itself a thing and does not comprise some enduring essence of an entity. Each entity is defined anew on each occasion. [**PPT]**

It is fundamental to the metaphysical doctrine of the philosophy of organism, that the notion of an actual entity as the unchanging subject of change is completely abandoned. An actual entity is at once the subject experiencing and the superject of its experiences. It is subject-superject and neither half of this description can for a moment be lost sight of. (PR, 29)

The coming together of diverse experiences into a novel unity is the process of becoming a subject (which Whitehead refers to as its **[PPT]** ‘concrescence’ (PR, 41-2)). There is no subjectivity prior to this combining. There is no on-going mind or identity which lurks behind or sustains a continuing individuality. Instead, on each occasion of a novel combining of diverse elements, there is the development of a new superject. No longer is subjectivity that which is limited to humans; no longer is it an enduring facet of a person or a guarantor of a continuing self-identity. The term “superject” with its connotations of a throwing beyond the present should alert us to this lack of a substantial base to subjectivity: that which experiences is some kind of a subject but the process of this experiencing entails a going beyond (hence the term “superject”).

Whitehead gets round the problem of objects and subjects by making everything into a subject!!!!

Or, to be more precise, a “superject”

And this very word “superject” elicits the dynamic character of existence and overcomes simple conceptions of the past, present and future. [**PPT]** It is the ’past hurling itself into a new transcendent fact. It is the flying dart...hurled beyond the bounds of the world’ (AI, 227). Being is constituted through the launch of the past into the future. This is the being of becoming. Moreover, **[PPT]** ’*how* an actual entity *becomes* constitutes *what* that actual entity *is*... Its ”being” is constituted by its ”becoming”. This is the ”principle of process”’ (PR, 23. Emphasis in original). Whitehead’s conception of existence is always focussed on the “*how*” of becoming. “How” an actual entity becomes creates what that entity *is –* rather than attempting to assign properties to fixed, inert objects.

It should be noted that all ”things”, all items of materiality are subjects (in terms of constituting a superject). But, each such item, each such subject, is a novel creation.

Furthermore, in Whitehead’s ontology, the terms “object” and “subject” lose their usual senses as becoming is given priority **[PPT]** - ’subject and object are relative terms’ (AI, 226). That is to say, each actual entity only exists for as long as it is becoming. When it has become it “perishes”. This does not mean that it somehow vanishes out of the universe. Instead, it becomes a potential item of data for the creation of new entities. In this sense it is an “object”.

**An Important Aside**

Whitehead’s description of actual entities, as has just been summarized, is designed to illustrate the reality of what he calls “stubborn fact” within a universe which is characterized by continual process. As such, it is an abstract theory of the conditions of existence. The point of Whitehead’s analysis is to provide a systematic conceptual framework which encompasses the facticity and potentiality inherent in all existence. Actual entities do not comprise the material world as encountered (by humans) and there is no benefit in trying to map actual entities onto elements of the world as experienced by humans; for example, by envisaging them as fundamental particles such as electrons or quarks. Their role is not to describe the world “as it is” but to enable novel conceptual constructions which more fully and adequately account for the diversity and process of reality (so, for example, **[PPT]** ‘a molecule is a historic route of actual occasions’[[2]](#endnote-1) (PR, 80)). The point to be made, at present, is that Whitehead wants to shift the emphasis from the notion of objects and subjects to one of experiences; such experiences are what make up the eventful character of existence. That is to say, the world is not made up of inert objects but of those events of experience which we undergo.

ADDENDUM, if time –

**Prehensions**

The process of existence is not, according to Whitehead, some kind of undulating, undifferentiated, flow or flux. He manages to maintain both becoming and differentiation by insisting that each becoming unfolds in a different manner, incorporates different elements to every other becoming. In order to more fully explain the constituency of an actual entity and how its very being enables, indeed requires, its inter-relation with and co-constitution by other entities, Whitehead introduces the notion of “prehensions”: **[PPT]** ’the first analysis of an actual entity, into its most concrete elements, discloses it to be a concrescence of prehensions, which have originated in the process of becoming. All further analysis is an analysis of prehensions’ (PR, 23). The word “prehension” is not a neologism, Whitehead did not invent this term. It is a little used word which means “grasping” and which Whitehead adopts as pivotal in accounting for the manner in which things come to be. Prehensions enable Whitehead to account for differentiated becomings within a wider system of process *and* to retain a grasp on the “concrete”, on the materiality of reality. But that, perhaps, if for another talk.

**Another addition - [PPT]**

**‘**Each actuality is essentially bipolar, physical and mental, and the physical inheri­tance is essentially accompanied by a concep­tual reaction partly conformed to it, and partly introducto­ry of a relevant novel contrast’ (PR, 108).

1. Although not strictly a member of the group, A.J. Ayer’s 1971 book *Language, Truth and Logic* gives a vivid and entertaining account, especially in relation to ethics. [↑](#footnote-ref-1)
2. The term “actual occasion” is one which Whitehead deploys to refer to an actual entity which has temporal and spatial extension: ‘the term “actual occasion” is used synony­mously with “actual entity”; but chiefly when its character of extensiveness has some direct relevance to the discussion, either extensiveness in the form of temporal extensiveness, that is to say “duration,” or extensiveness in the form of spatial extension, or in the more complete signification of spatio‑temporal extensiveness’ (PR, 77) . For simplicity’s sake, the term actual entity has been used throughout the analysis offered here. [↑](#endnote-ref-1)