A Constructivist Reading of Process and Reality

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The problem I want to address here is how to approach *Process and Reality*, a text which has repelled so many readers but also a text which, I will claim, must be defended against a rather usual reading, which would bring the reader back to the common sense notion of a "conception of the world", to be compared to so many such conceptions we have already, be them inspired by physics, by complexity theory or by theory of emergence.

If Whitehead text had to be understood in such terms, its astonishing difficulty would be a matter of perplexity. Usually, the first efficacy of conceptions of the world is to produce adhesion, a feeling that we have understood, that the world explains itself for us. But if we are tempted to understand Whitehead's proposition as unfolding the vision of a creative universe, we are thrown into some confusion. Not only creativity never appears as an actor, or a power, or a tendency, or a force, but strange concepts, such as eternal objects or God, seem to stand in the way of any intuitive understanding of the world as some sort of creative, spontaneous becoming. Indeed the necessity of those strange concepts is associated with a principle which seems to inherit the great rationalist tradition, the "ontological principle" which states that "there is nothing which floats into the world from nowhere" (244), that is that whatever happens must be related to reasons. And creativity is not a reason : "actual entities are the only reasons" (24).

What I wish to propose is a specific stance which I hope may allow experimenting the very original efficacy of this strange work. I associate this stance with "constructivism".

The reading I propose take as its starting point that Whitehead gave to philosophy not the task to go beyond abstractions or interpretations, but the task to take care of our abstractions, even comparing it to engineering. "*You cannot think without abstractions; accordingly it is of the utmost importance to be vigilant in critically revising your* modes *of abstraction... An active school of philosophy is quite as important for the locomotion of ideas, as is an active school of railways engineers for the locomotion of fuel*" (SMW, 59).

In *Process and Reality*, the idea is similar, with the only difference that the experimental physicist has replaced the engineer. "*Every science must devise its own instruments. The tool required for*

philosophy is language. Thus philosophy redesigns language in the same way that, in physical science, pre-existing appliances are redesigned. It is exactly at this point that the appeal to facts is a difficult operation. This appeal is not solely to the expression of the facts in the current verbal statements. The adequacy of such sentences is the main question at issue." (PR, 11)

The main question at issue is indeed the way our current verbal statements as well as the way we take into account our perceptions is highly selective, discarding what does not matter, and more particularly what there is no need to notice because it is always present. "*We habitually observe by the method of difference. Sometimes we see an elephant, and sometimes we do not. The result is that an elephant, when present, is noticed. Facility of observation depends on the fact that the object observed is important when present, and sometimes is absent.*" (4).

When announcing calmly that philosophy is something akin to engineering, that its task is to redesign, that is to fabricate and test, abstract concepts, Whitehead takes what I call a constructivist stance. He choose not to defend concrete experience against its falsification by intellectual abstractions, not to awaken some kind of Bergsonian intuition. Whitehead did recognize his indebtedness to Bergson, and also to William James and John Dewey, but, he wrote (PR XII) that one of his preoccupations "*has been to rescue their type of thought from the charge of anti-intellectualism, which rightly or wrongly has been associated with it.*".

For Whitehead abstract propositions, be them propositions relating a perception or philosophical propositions are not something, which would be abstracted from what would be more concrete. They are first and foremost interesting, eliciting interest, and more precisely a variation of interest. In *Modes of Thought*, Whitehead wrote that the basic expression of this value is – "*Have a care, here is something that matters! Yes – that is the best phrase – the primary glimmering of consciousness reveals, something that matters.*" (MT, 116). Abstract propositions are asking for, and prompting to, a "leap of imagination", they act as a lure for feeling, for feeling "something that matters". This is why the task he assigned to philosophy, to design new abstractions, would be a success only if those abstractions induced an empirically felt elucidation of our experience. When he wrote in *Modes of Thought* that "*The aim of philosophy is sheer disclosure*" (MT, 49), he did not mean the disclosure of the truth of the world, but the empirically felt variation of the way our experience, inextricably associating the "what" of the experience, be it electrons or God, and its how, matters.

A constructivist reading of *Process and Reality* is thus not a reading which would denounce the value of truth associated with our judgements. Adequacy to some pre-existing matter of fact is not a claim to be criticized. It may indeed be what first matters, in police inquiry for instance. The mere point is that this value cannot be generalized but related to the "how" of this experience, that of the inquirer getting to the "whodunit" solution for instance. The importance of specific and demanding questions will then be enlightened, such as "does this solution articulate together all relevant facts?", "does it resist relevant doubts ?". In other words, the kind of achievement "adequacy" implies must be specified. When Whitehead wrote that for philosophy the adequacy of the expression of the facts in the current verbal statements is the main question at issue, he implied that in this case adequacy is a trap. When I state "here is a green leaf", it is obviously adequate to the matter of fact that we all may perceive the green leaf, and this adequacy is in itself the verification that perception is a triumph of abstraction, selecting what matters and what can be efficiently stated. But disentangling philosophy from the

questions verifying the adequacy of statements to pre-existing matters of fact does not mean that we define philosophy as aiming at some kind of truth which would go beyond our abstractions and would give us the power to judge them. For Whitehead we are not prisoners of our abstractions. In contrast, we may well become prisoners of the false problems they create, when we extend outside their specialized domain the trust they indeed deserve inside this domain. The point is thus not to criticize abstractions but to take care of them, and to engineer new modes of abstractions designed to lure an appreciation of our many modes of abstraction without nostalgia for whatever would lead us beyond them.

To define abstractions as lures, and not as generalizations, is something any mathematician would endorse. For a mathematician abstractions are not opposed to concrete experience. They vectorize concrete experience. Just think to the difference between the mute perplexity and disarray of anybody who faces a mathematical proposition or equation as a meaningless sequence of signs, and the one who, looking at this same sequence, experiments sheer disclosure, who immediately knows how to deal with it, or is passionately aware that a new possibility of doing mathematics may be there. In order to think abstractions in the constructivist sense I am presenting, we need to forget about nouns like "a table" or "a human being", and think rather about a mathematical circle. Such a circle is not abstracted from concrete circular forms, its mode of abstraction is related to its functioning as a lure for mathematical thought, luring mathematicians into adventures which produce into a mathematical mode of existence new aspects of what it means, to be a circle.

The main difference between mathematics and philosophy, however, is that the mathematician may well redesign her mathematical tools, she may trust them, while the philosopher must distrust both language and the facts as they are expressed in current verbal statements. This is why the comparison with physics experimental appliance is quite interesting. Indeed the idea that experimentation appeals to facts as they would be observed and characterized by the means of experimental appliances only refers to the stabilized end product of a difficult operation. As Andrew Pickering marvellously characterized it, in its *Mangle of Practice*, experimenters may well know in advance what they want to achieve, what their device, for instance, should detect, a long process of tuning nevertheless will be needed, along which nothing will be trusted, neither the human hypothesis, nor the observations the device proposes. The process of tuning indeed works both ways, on human as well as on nonhuman agency, constitutively intertwining a double process of emergence, of a disciplined human agency and of a captured material agency.

There exists a controversy among Whiteheadian scholars, which this intertwined process of co-emergence may enlighten. On the one side, Lewis Ford has promoted a compositional analysis of *Science and the Modern World*, and of *Process and Reality,* which emphasizes the radical nature of the discontinuities occurring in the text. It may indeed seem in many occasions that a new philosopher enters the scene, and, as Leibniz would say, leads the reader back towards the wide see while she thought herself safely in a harbour. On the other, some refuse the idea of a Whitehead changing his mind and his philosophy times and times again, and insist on the continuity of one and always the same philosophy, expressed under different emphasis.

I would claim that we may follow in the compositional adventure of *Process and Reality* as Lewis Ford has tentatively reconstituted it, an intertwined process of co-emergence. The adventure of the creation

of a conceptual agency cannot be disentangled from the experiential adventure of the philosopher experimenting sheer disclosure, not disclosure of a pre-existent experience, but of experience as conceptually "lured". Each concept had to be designed and redesigned, as the point was not adequacy to any kind of pre-existent matter of fact but two questions always at work : is the conceptual agency succeeding in doing what the philosopher aims it to do, and are the aims of the philosopher as he formulated them an adequate expression of the challenge he has decided to confront.

You never construct "in general", always in relation with what Bruno Latour calls a "matter of concern". Whitehead's matter of concern was explicit from the start, with the famous theme of the bifurcation of nature, as amplified with that of the "misplaced concreteness" modern epoch did confer to its powerful abstractions. Nature bifurcates when we assert that there exists on one side a causal, objective nature - for instance the molecular mechanisms explaining the functioning of neurons and the interactions between neurons -, and on the other side a perceived nature full of sounds, odours, enjoyments and values, all those so-called secondary properties being "*properly speaking, qualities of the brain alone…. "* Which means, Whitehead comments, that usually nature would "*get credit which should in truth be reserved for ourselves: the rose for its scent; the nightingale for his song; and the sun for its radiance. The poets are entirely mistaken. They should address their lyIrics to themselves, and turn them into odes of self-congratulation on the excellency of human mind*" (SMW, 54).
It may be said that Whitehead's whole speculative enterprise started from his diagnose about the bifurcation of nature as a case of radical incoherence which literally plagues modern thought, being an ever renewed source for problems of our own making, problems which stem from the clash between abstractions associated to the success of the so-called laws of nature on the one side, and on the other, abstractions organized around human perception, freedom, intentionality or responsibility. A contemporary example of such problems is the definition of the so-called naturalization of consciousness as the remaining "hard problem" to be solved by the progress of objective science. Many critical philosophers, including empirical philosophers, Kant followers, or phenomenologists would maybe agree that this hard problem is in fact a false problem, as consciousness, conscious perception or human intentionality are required by any objective knowledge, are what objective knowledge presupposes and thus cannot objectify. Usually however this agreement leads to a critique of the scientists' claims that their objective laws describe nature independently of the perceiving mind or the human language or culture. Knowledge is conditioned, it is not a mirror of nature. The philosopher then tells the scientist: you believe that you enjoy some kind of a direct access to reality, you are wrong, the value of realism you associate with your success is mistaken. Whitehead did refuse escaping the bifurcation of nature at the price of defacing the success of science. Already, in *Concept of Nature*, he wrote decisively "*For natural philosophy everything perceived is in nature (…) In making this demand I conceive myself as adopting our immediate instinctive attitude towards perceptual knowledge which is only abandoned under the influence of theory. We are instinctively willing to believe that by due attention, more can be found in nature than that which is observed at first sight. But we will not be content with less.*" (29)
What means to be "in" nature will be a matter for philosophical construction but, whatever the elucidation, what is prohibited from the start is that we are left with the nostalgic memory of what we

believed we experienced about nature, and must accept now to be only ours : our own transcendental, cultural linguistic, or social construction. For Whitehead what we perceive may be transformed, if the way we pay attention changes, but it cannot be annihilated, interpreted away in terms of general conditions, which would explain away what did first matter. Due attention means becoming able to add, not subtract, means learning how to get access, not renouncing the possibility of an access. Adding, not deconstructing, here is the crucial point when a constructivist reading is concerned. It is not such an hard step however. Who, indeed, did ever believe that getting access could be achieved without a construction ? It may be that the tales of "objectivity" against subjective opinions, which is part of scientific propaganda since Galileo, induced the fairy tale idea of getting access as succeeding leaving the entangled forest of our illusions and discovering the Sleeping Beauty castle, there, clear and obvious under the sun. But in order to resist this tale, there is no need to deconstruct, to deny that Galileo indeed achieved something. It is sufficient to characterize the construction as an achievement that is also the specificity of the demands it succeeded in satisfying.

In physics, and in any experimental science (I exclude sciences which just mimic experimentation), objectivity is indeed the name for an achievement, the very specific value of which permeates both the concern of the experimenter and the verification by her competent colleagues. What must be verified is that a scientist has achieved a very peculiar feat, constructing an experimental situation which did allow what was questioned to make an actual decidable difference. This is why the difference between artefact and reliable fact is at the centre of the experimentalists' attention. It is a difference they have to make, and it is not a difference between mirroring and constructing but between their definition of the difference between a successful construction and a failure.

Divorcing constructivism from deconstruction entails not to confuse the making of the difference between achievement and failure with any kind of "social construction only". When the experimental achievement is concerned the verification of this difference asks for a community wondering and testing both the due attention, the relevant questions, and the design and redesign of minutes aspects of the technical devices, in order to verify the claim that a reliable access has indeed been constructed, that is, that the responsibility for the results can be referred to what the scientist was trying to get access to. It is certainly possible to deconstruct a scientific achievement into a set of more general, socially entertained, conditions and some kind of a mute being with which no reliable relation has been produced. But whoever so succeeds has played the very important scientific role of diagnosing an artefact.

As I already claimed, the worse misunderstanding about Whitehead's conceptual scheme would be, and too often is, to identify it with a "conception of the world". This, as it can now be understood would mean attributing to it the same kind of claim to reality that is associated with experimental beings. I do not mean that actual entities, eternal objects, or Whitehead's God would be fictions only, while electrons would truly exist. The very crucial importance of constructivism as I present it here is to relate mode of existence and mode of achievement. We may well say that electrons "truly exist" as opposed to fictions - meaning what would refer to human free interpretation -, because the whole of the experimental practice aims at dramatizing this alternative, making the possibility of deciding about it the crucial demand and value associated with an experimental device. But the crucial point for

Whitehead is not, emphatically not, this alternative, which, if generalized, would deface interpretation. Our modes of interpretation matter. The experimental opposition between "mere fiction" and "truly existing" is to be understood as giving its value and importance to a very particular and demanding mode of interpretation. Interpretation is a serious, vital, business, never to be reduced to "mere interpretation".

Whitehead famously remarked that if you wish an experience devoid of interpretation, you may as well ask a stone to record its auto-biography (PR, 15). And I would add, it would be still better to ask it to Galileo's carefully polished round balls, rolling down an also carefully smoothed inclined plane. Indeed the whole polishing and smoothing experimental activity had for its aim that the auto-biography of the rolling down ball would tell nothing about the ball as such in order for the speed it gains to reliably testify for what we call now terrestrial attraction. The intricate adventure we call friction must not be recorded. When friction matters, the motion of the ball is no longer illustrating one particular solution to an abstract, anonymous differential equation. What happens demands an attention which today's engineers ands physicists specialising in surface effects still laboriously learn how to pay.

The kind of achievement Whitehead aimed at could be described as a maximisation of friction, recovering what has been obscured by specialized selection, not Galileo's selection only, smoothing away friction, but more generally all the selections produced by consciousness and language, that is by the very important and successful abstractions which put emphasis on what matters for our many specialized practices, including that of surviving. Whitehead wanted to create new abstractions the achievement of which would be to act as lures for an aesthetic appreciation of our diverging specialized abstractions, as they are well worth the kind of attention, care and lucidity engineers devote to technical equipments.

However you cannot create "in general". A constructivist approach implies that any new, creative construction testifies not only for a matter of concern, but also for a commitment bearing on how this matter of concern obliged to think and create. Engineers usually know what they are committed to achieve. For Whitehead, the divide displayed by the bifurcation of nature was a matter of concern, and his commitment, the demand his whole enterprise had to satisfy, was to achieve coherence. It is the demand that we become able to interpret together, without opposition, hierarchy or disconnection, what we usually describe in terms of mutually contradicting terms, freedom and determination, for instance, or cause and reason, or fiction and reality, or mind and matter.

It is crucial here to remember that the point is not to go beyond those contradictions towards some kind of an inspired or transcendent vision, mysteriously able to discover a unified reality. Philosophy, as a kind of engineering, is about designing not transcending, and this is why Whitehead did deliberately formulate the kind of satisfaction his demand for coherence would have to fulfil. The divide displayed by the bifurcation of nature must not be repaired or tamed. Any strategy of explaining away, of reducing some aspects of our experience to selected others, has to be resisted. In other words, the demand for coherence will authorize no simplification, no purification or selection of what would really matter. Everything we experiment must matter. As I said, friction must be maximised.

Again, it not a question of criticizing our specialized abstractions, or of dictating limitations. Rather of dramatizing them as achievements with a price. The aim was, as Whitehead wrote, to produce both a restraint upon specialists and an enlargement of their imagination (PR, 17). Limitation produces

nostalgia, dreams of the forbidden possibility for your abstractions to rule undisputed, while enlargement of imagination means appreciating the importance and value of abstractions as such.

Till now, what I have commented upon is mainly the introduction of *Process and Reality*. I will certainly not try to summarize Whitehead's conceptual scheme. It would contradict the very idea of a constructivist reading which cannot be separated from the efficacy of concepts, as their value is to lure new feelings, to induce new ways for experience to matter. I want to try and give you a taste of this kind of efficacy by following the change of emphasis a particular question may go through from a first starting point when it begins to matter till its Whiteheadian conceptual unfolding.

We know from Victor Lowe that after his first lecture, students were "in despair about the course", but "all in love with Whitehead as a person, for somehow the overwhelming magic of his being had shown through". The philosopher who had been assigned to be his assistant remembered that when Whitehead concluded his lecture "the angels were singing". In contrast, when reading *Process and Reality* angels are not singing. Instead of this immediate enjoyment, the reader experiment constant perplexity. Is this sentence to be taken seriously, is it rather badly written poetry, is it sheer non-sense? Such a difference is usually associated with the well-known opposition between the effect that non-sense statements plus charismatic tricks may produce, and statements with an objective content the faithful transmission of which can be verified. Whitehead's charismatic presence would then have been responsible for the effect he produced, suggesting poor students he was exploring deep intuitions while he was in fact uttering sheer non-sense.

Such an opposition, and such terms as charismatic presence or suggestion, which amplify the opposition without adding anything to it, may certainly be an important one but it is also a highly specialized one, designating the practices the value of which depends on faithful transmission of a well-defined information. Its generalization, the feeling that the opposition is generally important, may rely on the other hand on the habit we have of asking what is responsible for what. Is it the singer or the song ? Am I moved because what I experience is moving, or do I feel it as moving because I am emotionally excited? But this idea of responsibility is also part of those very abstractions governing special modes of thought the domination of which, for Whitehead, it was the task of philosophy to restrain. It is the same problem as the elephant: responsibility matters because sometimes you are responsible and sometimes you are not. What would it feel like to restrain the importance we associate with judgements assigning responsibility?

The crucial point is that this restraint must not result from a renunciation but from what Whitehead called an enlargement of the imagination. We have to learn to wonder about what we take for granted, that is to leave the settled, frictionless ground where the question of what is responsible for an eventual misunderstanding matters, while frictionless understanding is taken for granted. Sometimes we misunderstand but usually we understand.

In order to wonder, it is important that understanding and misunderstanding designate a secondary contrast, a matter of occasional verification. Did I understand correctly? What first matters is that my squeaks did make some sense. This is a matter of wonder, what Whitehead called in *Religion in the Making* the one, fundamental sacrament, the sacrament of expression. "*There is a community of intuition by reason of the sacrament of expression proffered by one and received by the other. But the*

expressive sign is more than interpretable. It is creative. It elicits the intuition which interprets it."
(RM, 131-132)

How to understand the use of this uncommon word, "sacrament" ? Do we have to take seriously, literally, the community of intuition it elicits, referring it to a religious rite? Or is it just a fuzzy metaphor? I would suggest that it is a starting point, with a double demand. One is addressed to the reader: to use the word "sacrament" is to ask the reader to wonder, to slow down and accept that the expressivity of the sign we usually take for granted is indeed a wonder. The other one is addressed to the conceptual construction, which will proceed, and it indicates the kind of risk Whitehead has decided to accept.

In *Modes of Thought*, Whitehead wrote : *"Philosophy begins in wonder. And, at the end, when philosophic thought has done its best, the wonder remains"* (168). At the end, when Whitehead will have done his best, the wonder will remain. The conceptual construction is not meant to think it away but to fully develop how it puts our usual generalizations and explanations at risk. Indeed, in the catholic doctrine, which Whitehead had carefully examined, sacramental efficacy cannot be reduced to anything else, more general, and in particular to some catchword explanation as "human subjectivity". To use this expression, "the sacrament of the sign", thus commits Whitehead as a problem commits a mathematician: whatever we mean by human subjectivity, it will presuppose the efficacy of the sign, and not explain it.

This does not mean at all that, as in catholic sacraments, this efficacy would immediately exhibit a supernatural power. It rather asks us not to be satisfied with what we would call by contrast a "natural" explanation. Whatever the explanation we are tempted to provide for this fact, that you are creating meanings elicited by my squeaks, mispronounced squeaks furthermore, those explanation are bound, one way or an other, to bypass what Whitehead wants us to dwell upon. For instance if we think about a selective process which, after a long biological evolution, would have made possible for us to understand each others, whatever the characterization of this process, it should presuppose and celebrate the sacrament of expression, not explain it away.

Here, however, we face the crucial point. Indeed to celebrate the efficacy of the sign as unique could well lead to a particular version of the bifurcation of nature, through the linguistic turn for instance. One way or another all our experiences, all our explanations, would first of all be characterized as conditioned by linguistic expressivity. This is why it is very important to emphasize that the conceptual construction has not begun yet. It will start only when the demand for coherence, that is the position Whitehead has taken with regards to modern abstractions, abstractions overemphasizing the divide between the conscious subject and the known object, will have acquired a positive formulation, designating the challenge the construction must satisfy. Exaggerating the importance of community of intuition would put consciousness at the centre. The task of philosophy is not only to produce the concepts which would put in sheer disclosure the wonderful efficacy of the expressive sign as what primordially matters for us, as conscious beings, but also to elucidate those aspects of experience which do not matter the same way because they are always there, even when the community of intuition breaks down and you stop understanding what somebody tells you.

Already in *Concept of Nature*, Whitehead emphasized that what he called, roughly speaking, "bodily life" (107) was part of our experience, and in *Process and Reality*, he named 'causal efficacy' the

experience of our own body, an experience the loss of which the psychiatrist Oliver Sacks has described as the worse catastrophe we may experiment. Indeed, with the feeling of the body, what is lost is the very enjoyment, the withness, of the world. We enjoy a world, including the feeling of our own body, even if we are usually not conscious of it, even if we have only vague words about it. Those words must be designed in order for the elucidation of our experience not to stop with the wonderful efficacy of the sign.

But if enjoyment is restricted to the human embodied experience, we are back again to the bifurcation of nature. The poet enjoys the beauty of the nightingale's song but the nightingale enjoys nothing. We may well decide to attribute enjoyment to some select animal species, including the singing nightingale, but we would then have to explain how enjoyment came to be produced at some time, for some select living species, maybe at some level of cerebral complexity, and here again nature will bifurcate, with on one side beings the functioning of which may be explained by causal, objective mechanisms, and on the other enjoying beings, that is beings endowed with an experience.

And it is here that the demand for coherence will produce its positive challenge. Experience, not as associated with knowledge, or consciousness, or perception, but as associated with creative self-determination about something else, is what must be affirmed for everything that exists, or incoherence will rule. As Whitehead wrote, "*apart from the experience of subjects there is nothing, nothing, nothing, bare nothingness*" (167)

The wonder starting from the wonderful efficacy of expressive signs is now generalized. Signs may elicit intuition but what matters now is "efficacy" itself, that is the subjective, value producing, process of self-determination which is the coming into existence of everything that actually exists. A subject is not something which would exist, and then would happen to enjoy this or that, to share or not to share a community of intuition as elicited by a sign. What Whitehead calls a subject is the very process of the becoming together, of becoming one, and being enjoyed as one, of what is initially given as stemming from elsewhere. In other words the sacrament associated to the sign was indeed just a beginning. Whatever we call a cause, even a physical interaction, has no power to cause independently of the way it will be grasped into a subjective process of self-production. Independently of what Whitehead called a concrescence, the self-production of an actual occasion.

I will certainly not enter into the full conceptual construction of actual occasions. The trap I want to avoid is the idea that the proposition "actual occasions exist" would be a matter of belief, that Whitehead did believe, and would ask his reader to believe, that actual occasions do "truly exist", as a matter of fact, just as physicists have successfully claimed that atoms exist. I want rather to try and have you feel the kind of efficacy of those fantastic metaphysical existents he named "actual occasions". As speculative abstractions, what decides between their failure and success is the very demanding transformation of emphasis they may produce as regards the powerful and, let us recall it, pragmatically justified, abstractions which lure and sometimes dominate our experiences.

The demand for coherence means that Whitehead's speculative abstractions will be a failure if the kind of emphasis they produce entails a privilege for one of those powerful abstractions. The actual occasion has for its first efficacy to destroy both the privilege of the kind of explanation physics achieved, where functions describe the way physical entities continuously interact with each other, and the interpretation of ourselves as living, intentional continuities. It more generally entails the restraining

of authority of any abstraction which supposes and takes for granted the endurance of whatever we can describe, perceive or explain, and which asks for a special justification when this endurance fails.

This is how we may understand the most surprising feature of Whitehead's actual occasions, that is that they are indeed "occasions", temporally atomic. When the process of subjective self-determination about what was initially given has been fulfilled, when the occasion has achieved its own specific individual being, its satisfaction, that is when the initial many has become one, the many are increased by one. The occasion has attained what Whitehead calls "objective immortality", it will feel no longer, experience no longer, but will be what will have to be felt by other subsequent occasions. Thus, actual occasions imply that discontinuity is primordial, while continuity, and with continuity all our usual perceptive habits, causal explanations and experience of ourselves as continuous identities, have lost their claim and power to explain. They must be conceptually explained, and will be explained by Whitehead as relative to the endurance of a social order. What we call an electron, or ourselves as we feel endowed with a continuing life of our own, are societies, complex routes of occasions exhibiting some conformity as each reproduces and confirms a way of feeling, of achieving its own identity, as proposed by the particular social environment it inherits.

But the temporal discontinuity of actual occasions is not only a mean to construct the one plane on which what we oppose will be described and characterized together as societies. What matters first is that each occasion is, as such, a new occasion. When Whitehead first described the bifurcation of nature, his concern was perception and explanation, and he did not include in the explicit challenge the problem of novelty. It is a part of his very conceptual adventure that he came to identify this problem as the ultimate challenge his demand for coherence had to satisfy. It is no longer the enjoyment of the nightingale song which matters, but also the very hope and trust the thinker entertains, that she may be able to produce new relevant propositions.

The possibility of a breaking of social continuity by some new, non-conformal occasional mode of becoming one is why actual occasions matter. But novelty as defined by unpredictability will not be sufficient. And it is also not sufficient to oppose conformity and non-conformity as we oppose "yes" and "no". To belong to a society is, in a way, to answer "yes", but "no" will not do for non conformity, as "no", Whitehead stated, is consciousness in germ. What we conceptually need is the possibility of relevant novelty, what Whitehead called "originality". If this possibility is not a primary conceptual feature, you never will obtain it without a bifurcation of nature, with the nightingale's and our own social habits on the one hand, and, on the other, the very fact you are here, with the faint hope that maybe I will provide the occasion for some new idea of your own.

Here we may at last come back to the efficacy of the sign as eliciting a community of intuition. It was the starting point, the initial wonder, but it is now a witness for a social achievement, as dominated by the settled ground of common understanding and anticipation. As Whitehead remarked in *Religion in the Making*, "*The sign cannot elicit what is not there. A note on a tuning fork can elicit a response from the piano. But the piano has already in it the string tuned to the same note. In the same way the expressive sign elicits the existent intuition which would not otherwise emerge into individual distinctiveness*". But you cannot characterize in the same way the occasion when you feel the precarious, ready to fly away, beginning of a new intuition, something which was not there before.

Implementing the possibility of relevant novelty, tuning his conceptual agency till it was able to enhance and unfold into disclosure what originality demands, was one of the challenge at work during the composition of *Process and Reality*. It does not mean that Whitehead would have discovered the true nature of originality, but that the question of originality has obliged him to put to the test and revise his concepts. And this is the very role of the "ontological principle" I alluded to at the beginning: since it demands reasons and prohibits any easy appeal to creativity as explaining novelty, it confers to novelty the power to oblige thought.

To tell it briefly, Whitehead finally formulated the most strict distinction between data as something which have to be felt, and the open, to be determined, question of how they will be felt, how they will become an ingredient in the superjective final unification. This distinction between what we feel and how we feel it, seems simple enough – philosophy is sheer disclosure. However to make it irreducible, to escape any possibility for the experience, any experience, to be reduced to a function, that is to be explained in terms of some continuity, implied not only the famous, so easily misunderstood, "eternal objects", the ingression of which is the determination of the how, but also God without which no unrealised eternal object would make ingression, no new relevant novelty marked by a new how, or a new contrast would be possible. "*Apart from the intervention of God, there could be nothing new in the world, and no order in the world. The course of creation would be a dead level of ineffectiveness, with all balance and intensity progressively excluded by the cross-currents of incompatibility.*" (PR, 247)

A constructivist stance is essential for this word, "God", not to elicit a communion of scandalized intuition. Whitehead did not need God in order to answer an emotional or religious need, and the way he designed and redesigned this particular conceptual appliance makes quite clear how strongly he felt the need to precisely tune it. In particular God was not to be the source of social order, be it the one which is exemplified by physical laws or by moral habits. God's functioning has to do with actual occasions only, with the envisagement of each occasion as an opportunity for a slightly non-conformal, original feeling.

In physics, the fact that order needs novelty is not exhibited since the relevance of the laws of physics depends on the possibility of organizing the definition of their specific social order around conservation and functional conformity. But for Whitehead it is exhibited in biology by the very inconspicuous kind of novelty which is the capacity of any living being to adapt to a changing environment. As always with Whitehead, the question of originality has been generalised into a wonder about what it is rather easy to take for granted or to explain away by natural ad hoc explanations. For Whitehead, the fact that there is a certain originality in the response of a cell to an external stimulus does not have to be explained in social terms but celebrated through the distinction between living societies and "Life". "*Life is a bid for freedom*", he wrote, not to be confused with the enduring order of living societies. Life "*lurks in the interstices of every cell*", shaking off the shackle of reiteration of the past. (PR, 104-105)

As I repeatedly stated, Whitehead's concepts have for their first value to experiment how the demand for coherence, when systematically and constructively enacted, may modify our relations to our own experience. This can only be verified concretely, and in order to verify it, I will turn again, and for the

last time, to the contrast between "hearing angels sing" while listening to Whitehead, and reading *Process and Reality*.

To hear angels sing is an experience akin to what poetry may achieve, when novelty in the use of words is not experimented as such but immediately elicits a novel and original communion of intuition. The fact that for most students the experience did fade away like a dream, would not be a failure for poetry, but it is certainly one for philosophy. Achievement for a philosopher certainly implies the transmission of concepts as such, as the abstractions they are, as appliances the efficacy of which will be verified by new, original modes of thought. Using Whitehead's own concepts to describe this failure, one could say that the experience did not achieve socialization. The students' habitual thought patterns did endure, as the interstices where lurked the possibility of new lures for feeling did close down.

Whitehead certainly recognized the full legitimacy of this answer from his students, turning his philosophical propositions into something like an art performance, not accepting the experience as their own but attributing it to something they would never be, singing angels. We are no angels, back to the settled ground. Indeed Whitehead knew that what was at stake was not ideas to be entertained, but becoming, the students' own becoming. Such is the power of propositions that they may disrupt social order. "*When a non-conformal proposition is admitted into feeling… a novelty has emerged into creation. The novelty may promote or destroy order; it may be good or bad. But it is new, a new type of individual, and not merely a new intensity of individual feeling.*" Thought patterns, as everything which endure, are societies, which succeed in holding together, in maintaining themselves, or suffer collapse, and no transcendent legitimacy may authorize objecting against the students thought patterns resisting collapse. Indeed the students refusal may have been a saving one since it may happen that a new, non-conformal actuality appears in "*the wrong society amid which its claims to efficacy act mainly as inhibitions*" (223). For Whitehead "*insistence on birth at the wrong season is the trick of evil*".

Now, it may well be that when reading *Process and Reality* we do not hear angels sing is not a failure in Whitehead's terms, but cannot be disentangled from the task of philosophy, which is not for him immediate enjoyment but rather engineering relevant abstractions. And it may be that the very strange experience of reading *Process and Reality* exhibits and dramatizes the very problem Whitehead wanted to address. Indeed beyond the incoherence of dominating modern abstractions there is an other problem, that of the way we accept the domination of abstractions, that is accept to forget or neglect what we are aware of because it cannot be formulated in a clear self-contained way. Whitehead was not Bergsonian, this domination was not for him a weakness of the human mind against which the philosopher would have to struggle. He rather linked it with an historical event : writing taking a dominating position in our intellectual life. In *Modes of Thought* he wrote that speech is as old as human nature, it can even be said to be human nature itself, while writing is comparable to the steam engine. It is important, modern, and artificial. (MT, 37) It gave us increased powers of thought, of analysis, of recollection and of conjecture, but it also came historically to govern, or misgovern, our understanding of the function of language. Before the advent of writing, Whitehead's guess is that speech could not be separated from the interfusion of emotional expression and signalling, always entailing an immediate situation. "*Whether it was signal or expression, above all things it was* this *reaction to* that *situation in* this *environment*" (38). But when we talk now, we entertain the ideal that

we can abstract the meanings of the words we use from the presupposition of any particular environment. "*We cannot congratulate ourselves too warmly on the fact that we are born among people who can talk about green in abstraction from springtime. But at this point we must remember the warning – Nothing too much.*" (MT 38)

To civilize abstractions, which was Whitehead's aim, meant to engineer the kind of new, relevant abstractions that would have abstractions display their specific, mutually incompatible, partiality. It meant to display not the contradiction but the divergence between their specific social definitions of what matters. But it also meant to elicit into sheer disclosure the exaggerate trust we have in our own abstractions. Whitehead did not mean to have readers just being informed about abstractions able to civilize modern proud incoherence but meant also to actually transform the experience of his readers with regard to the role of abstractions writing did promote.

This is not a mere guess, everything is written down. Indeed Whitehead states at the very beginning of *Process and Reality*, that the "fundamental ideas" he will propose presuppose each others, but not as do words in a dictionary, each being definable in terms of some others. No, it meant that what was indefinable in one such idea could not be abstracted from its relevance to the others. In other words, Whitehead was going to use writing, and the increased powers of thought, of analysis, of recollection and of conjecture writing makes possible, in order to provide the environment needed for his abstractions to counteract the very kind of trust in our abstractions that writing has induced, the idea that they have got a meaning independent of their context. The idea, for instance, that we know very well what is green in abstraction from springtime. In *Process and Reality*, whatever the definitions Whitehead provides, we cannot but feel that the settled ground which permits the communion of intuition we call meaning is missing. Each abstraction is mutely appealing for an imaginative leap, and it is this very leap which cannot be abstracted from its relevance to other abstractions also calling for an imaginative leap.

This is why you cannot read *Process and Reality* from the first to the last page, in a linear manner, but must zigzag, using the index, being lured to come back to something you recollect but had remained mute, and which now takes a new importance, participating in the leap you have just felt possible. And it may also be why Whitehead's writing was a zigzagging one as well, abstaining from a careful rewriting of his whole text each time he redesigned his own concepts. Each new insertion, each new addition was to be understood as a partial explicit definition of what had till then been indefinable for him. And it may be finally that the very fact that his text does obviously not function smoothly, like a steam machine which has to avoid clashes or bumps, is as important as the content of the book. It exhibits that Whitehead was precisely working against the ideal of self-contained abstractions that writing induces, the definition of which would be a matter of direct access, of double click as Bruno Latour calls it. We may well complain that this does not make for an easy reading, but not that Whitehead did betray the demanding ideal he had decided it was the urgent task of modern philosophy to make matter, the ideal of coherence.