

Where does spacing and timing happen?

Two movements in the loss of cosmological innocence.

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Abstract.

A general feature of late modernity is the extension of a certain kind of critical awareness of constructedness, which used to be aimed only at the acts and beliefs of non-modern institutions and collectives, but is now returning home. We realize in practice, and to an increasing extent in theory, that we live in a world whose features – times and spaces, for instance – are constructed. This is a loss of what could be termed "cosmological innocence", that is, of a naive trust in e.g. spatial and temporal structures as simple representations of the world as it is. This paper explores the loss of innocence, arguing that it is a wholesome and enriching experience, and investigating how we can avoid a tendency of making it all over before it gets really interesting by assuming 100% guilt on behalf of transcendental, non-worldly human subjectivity. To counteract this, the paper proposes a process metaphysical approach which may allow us to openly share the joys and perils of constructing worlds along with other kinds of participants in the cosmos.

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First movement: devouring the factory clock

The Church of the Pantheon in Rome is one of the oldest buildings in the world still intact enough to perform its original function, probably the largest piece of antique architecture to do so. It probably owes its immortality to two things. One of them is the invention of a technology not usually associated with antiquity: the cupola is made in one huge piece, out of concrete. The other is its popularity with the citizens of Rome: early Christian rulers are said to have given up plans of demolishing it and converted it into a church. It is still quite obviously a temple for the cosmic-religious synthesis created at the short culmination of pagan antiquity: the all-embracing Sun God in the middle, and the entire antique pantheon arranged in a circle around Him, interpreted as His emanations.

The Pantheon also embodies antique time: the opening at the top of the cupola allows the Sun's rays to circulate within the temple, from subdeity to subdeity, so that the whole temple is effectively a sundial as well. The orderly array of subdeities, many of whom used to be associated with local orders with cults and calendars, beneath and around a central sun god, also represents the construction of a united cosmopolitan calendar. A chrono-political structure that explicitly draws its legitimacy from something cosmic, something of this world. This worldly connectedness, beautifully manifested in the hole in the ceiling, is what I want to focus on – this is what Christians and moderns have worked hard to purge from the construction of time.

The Pantheon thus exemplifies a politics of time, something we have had at least since late pagan antiquity. However, the history of modernity is intimately connected to a different chrono-political model which has been gaining power since the merging of Christianity and Roman imperial power. It has a tendency radically different from the cosmic, circular structure of the Pantheon. St. Augustine makes the famous

distinctive leap away from time as based on movements of the celestial bodies, even the sun, to an abstract, linear time.

I should note here that it is not just the invention of abstract time and space which is at issue, although abstraction is certainly involved (1). Antique, cosmic time also had its abstract expressions. If there is a particularly significant “leap” in Augustine it is that of faith, trust or delegation into the transcendent: time passes, not because of the nature of things but because of a power beyond nature. The idea of an original, natural “lived time” can be seen as an attempt at countering a temporal politics rather than just a form of abstraction, as I will outline shortly. I will also try to show that it is on the right track but insufficient.

Just as abstract mathematical models of time and space, non-astronomical clocks based on moving earthly parts or materials were known in antiquity, but the ideal of disentangled mechanical timing becomes much more powerful once it becomes the project of approximating pure time, no longer a second-rate copy of astronomical time. One thing this Christian-and-modern construction of time, as pure and evenly passing, can do is to organize work in ways that removes it more and more from local, traditional and finally even, to a large extent at least, biological constraints. In short, pure time can turn work into a resource. St. Augustine probably had no idea what he set in motion, but his notion of purified, fleeing time comes to full expression in modern protestant work ethics implanted in some of us, where not only the sun but even the alarm clock is unnecessary: the abstract idea of working hours is enough.

1.1 Alienation

Times and spaces are aspects of the way collectives and collective enterprises are organized, as the close pre-modern coupling between cults and calendars shows. Currency, time and space once carried the explicit stamp of originating heavenly or earthly agencies, but the Christian-Modern trend has been that of taking the agency ever further out of this world.

As Hegel analyses the movement of alienation, it is intimately connected with the exteriorisation expressed in the hypostatization of an absolute, disembodied time, just as it is connected with the interiorisation of the pure subject. But what Hegel is after is to point to the possible and necessary overcoming of alienation which consists in more than just a return to the original innocent state before the construction of clocks and time: we can and must grasp it and devour it, take its construction upon ourselves as our own self-expression.

Marx seems to only partially grasp time as a basic category and political instrument in the modern accelerating mobilization, exploitation and alienation. In any case he seems to take it as simply given that there is some kind of true measure of time in which a true measure of “value in use” is produced prior to exploitation. Much more important, however, is that Marx has shown alienation to be a very concrete structure in the process of work itself whereby it channels itself into an exchangeable commodity, and this of course requires it to be measured into exchangeable units, it requires the function of the generalized factory clock whose readings should ideally be available wherever there are work resources. Nowhere is the political meaning of process independent time expressed more clearly than here: the construction of a measure enabling the exchangeability of as many aspects as possible within the form of life.

Since the problem of alienation lies in this deep -- but historically variable -- characteristic structure of work itself, there is no radically transforming solution without a transformation in the way we organize work: in the very dynamics where networks are built and extended for more and more dominant practice of measurement and exchange, in such a way that the two poles of subjectivity are produced and reproduced: labourer and consumer. A genuinely new politics of time is one which will digest and transform the factory clock and the currency unit, abstract time and abstract value, the sense and power of the processes of measurement in both respects.

1.2 Opposition to alienation

This sheds an interesting light on the classical aesthetic opposition to externalized, spatialized time. This opposition is able to locate with great precision the core of the problem of the politics of time, but it becomes impotent when it comes to the establishment of an alternative, because it simply denies constructed, externalized time as a veil of illusion covering a true internal reality — and just because this internality is still the one constituted as one side of alienating temporal politics, it can only grasp this internality as a pure time of consciousness, feeling or intensity, perfectly expressed in the idea of “quality time”. Philosophical expressions of this romantic reaction against the abstract and utilitarian organization of time and production still abound — a monumental expression is Heidegger’s idea of original, authentic *Zeitlichkeit*, temporality (Heidegger, 1927), but it also has recent strong expressions, for example in the work of Hubert Dreyfus.

The attempt of turning this “reaction” in temporal politics into real life can take the shape of the attempt to avoid the technical and metrical wherever possible, and to displace the focus towards the human, subjective and organic. As in the wish of leaving the hectic career life and settle on a southern beach or village, or the wish to

work less to have time for children and self-realization. This is certainly desirable, but does not basically transform the politics of time because its issue is so easily settled on the other pole of the modern construction of temporal politics: time-money, work-consumption. It becomes, for example, a week of holiday quality time on a sunny beach. Nice, but no transformation — if we consider the amount of work and other resources set in motion in order to bring it about it certainly does not counteract mobilization. Indeed the romantic reaction can fit well in the function of making alienation bearable for groups who might otherwise have had power and creativity to change it. On the other hand the aesthetic turn contains not only the moment of enjoyment but also an active one, the ideal of expressive work beyond the form of repetition compliant with the generalized relation of measurement and exchange.

Another well known form of reaction in temporal politics is the one which keeps the factory clock but transfers the exchange of units of money and working time it regulates from private capitalists to the state as capitalist. Apart from the fact that this alternative form of organization has recently lost most of its once considerable extent leading to a wave of rather unthinking trust in the desirability and efficiency of the form of private capitalism, I suppose we can also say of the grand experiment of state capitalism that it has given us the important experience that the basic relation of work cannot be changed that way.

(I am not saying that Marxism is only about temporal politics. But as mentioned above, something very central in Marx's diagnosis of capitalism is exactly temporal politics. And even if the 20th Century attempts at installing Marxism at a state level certainly failed in terms of temporal politics and in many other respects I do not see why we should accept the notion that it was a complete failure — would the distribution of wealth in the West have improved so much if private capital had not been under pressure from a rivalling form of organization? A phenomenon similar to Catholic counter-reformation?)

So neither aesthetic recreation or redistribution of wealth have basically modified modern politics of time. All of this is perfectly in accordance with Marx's diagnosis of alienation as something which could not be modified without transforming the basic concrete relation of work.

1.3 Beyond alienation and opposition?

However, it is obvious that the markets of work themselves have started a metamorphosis in several important respects. An increasing number of employees in the richer parts of the world are themselves capitalists as well. Also an increasing amount of their work is involved in managing streams of work, money and other

resources, that is, the construction of the generalized factory and factory clock: an ever more refined system by which aspects of life that used to be local and internal -- child care, for one -- can be "lifted out", measured, exchanged, marketed. The clock is getting transformed into more and more complex and flexible systems for facilitating and regulating the exchange. Particularly, telework is expanding rapidly. Large groups are gaining increasing degrees of freedom for enfolded work in family life and self realization projects. Other and even larger groups are being marginalized in a paradoxically intensified alienation by not working for wages, or by low status telework without company of fellow workers.

A genuinely new politics of time must recognize the powerful ramified, complexified and rarefied factory clock as our own doing. We must, as Hegel said, sublate-and-elevate (*aufheben*) this time, or what is now this monstrously ramified rhizome of times, by taking it upon ourselves as our free expression. Making this timing part of ourselves may seem a redundant piece of advice, we are already co-originated with it to such an extent that we cannot really extract an original, prescientific, pretechnological humanity in ourselves. So it could seem that such an affirmative strategy means simply giving up all resistance to an alienating politics of time extending its network of ever finer tentacles ever deeper down in our being. On the other hand, the idea of resistance thus given up is the one that assumes a core being, in there, that we could possibly defend. Since there is not, we can instead grasp the possibilities of poetic co-construction of the strange new compound phenomena.

Perhaps there are patterns of a new politics of time in the air, already. Perhaps it is true, as Latour has argued (Latour 1997), that we are already very competent in handling and navigating a plurality of complex, co-constructed networks of spacing and timing activities. In other words, if Latour is right, in practice we are quite aware of the constructedness of the networks of measurement, exchange and control. But in order to own that awareness we still need to articulate an explicit metaphysics of time that could reflect this competence, one that would be able to "devour" the classical metaphysical structure that still fixes, in our modern self-understanding, the polarities of work and consumption and the standardizing metrics of time and value.

If we can express an affirmative participatory perspective on the world as process — without much timing or with a lot of it, as the case may be — we may be able to help a move towards a open-eyed, pluralist, ecological, democratic politics of time. Not trying to revert romantically to an ideal of "original time" ("human", experienced or organic time) but passing on, with open eyes, to the production of orders under maximal creative respect for the multiplicity of other orders. It is not in order to be efficient constructors, and not in order to stop the activity of constructing, but in

order to participate in it with such respect and creativity, that we need problematizations of the politics of time. They need to be articulate enough to stand up to the strong movement of metaphysical politics of time starting in Augustine, culminating in Newton, and paradoxically strengthened by romantic reactions at least up to Heidegger.

But why is it a concept of process that plays such a pivotal role? It has been pointed out by several authors that if we want to be able to understand the way technological and social networks and relations get constructed, we need to move our conceptual focus from the apparently stable product to the process of its making. So it is becoming common knowledge that processual thinking in this epistemological sense (that we construct something for ourselves which is then the structure of the world for us) is a necessary step if we do not want to be hopelessly naive. However, I would like to argue that it is not at all enough. This is why there is one more movement in this story.

Second movement: admitting the kinship

The understanding of times and spaces as something that is produced and maintained in concrete processes in the middle of the world is cosmological, and runs counter to a modern desire of being cosmologically innocent. This, I think, is why the terms spacing and timing have a fascinating rebellious ring to them. The important cosmological implication of the study of timing and spacing as worldly activities is not just the realization that we are not innocent in the sense that we — humans — are involved in the production of structures of the world like time and space. What is even more important is that spacing and timing happens here, in the middle of a cosmos full of other processes and agencies with their own rhythms and ideas of order which must be negotiated with, depended on, and subdued. It is a colorful, promiscuous and cruel kind of cosmogony we are involved in, and we ourselves are engendered in it.

In an attempt to strengthen not only the first but also the second sense of loss of cosmological innocence I am going to play with an awkward philosophical question: if space and time are results of construction processes, where and when do these processes themselves take place? But in order to ask this question in a way that is meaningful and powerful enough (sec. 2.3 below) I will need to spend a couple of pages considering the modern distribution of responsibilities and acknowledgements between humans and other participants in the cosmos.

2.1 The non-modern vice of cosmology

Cosmology is about the entities that populate a universe and the order of their configuration. It is about what is actually there in a world, about the things in themselves. Not about phenomena or appearances — not about the way things appear in the horizon of some subject or life form — but about the drift and the stuff and the order of what is there. Telling a meaningful story of the cosmos also means accounting for the way our form of life, any form of life, any collective, with its things, agencies and orders, connects with or emerges from orders around it, inside it, above, below, before — whatever may be the nature of the world, whatever weird, wonderful and terrible processes we may be embedded in.

A central aspect of modern correctness (or better, the dominant way of distributing roles and legitimacies that Latour has characterized as The Modern Constitution) is the “humble” attitude to the cosmos: we only claim to know what appears to us and can only attribute sense and value to things in terms of human needs and projects. Cosmology is a very non-modern kind of enterprise, as already pointed out by Kant, the modern thinker par excellence.

Of course there is the important exception of modern physical cosmology, that is, the late 20th C development of a discipline within the science of physics, extending the treatment of laws, particles, forces, and particularly space and time, from the local to the global in the widest and wildest sense, and particularly to the birth of space, time and structure altogether. It is taking modern physics to its wildest limits. It is speculative, it is fun, it commands enormous powers of fascination with physicists as well as everyone else. Which makes it an extremely important ally for the raising of funds for accelerators and other Big Science installations. I think it is pretty obvious that this power arises just from the status of late modern physical cosmology as an exception — a relaxation, a loophole, perhaps a dialectical self-negation or a beginning internal destabilization — in the modern a-cosmic attitude.

So I maintain that this “cosmology” is a singular exception to the dominant modern tendency of avoiding the cosmic, and it is significant that this exception is strictly confined within a discipline which has acquired the highest status in the hierarchy of modern sciences: fundamental physics, the purest and simplest science, the one tainted to the smallest possible extent by the impurities of local conditions and constraints imposed by particular system types, environments, not to mention interests. And even in the case of this attractive exception, there are modernizing forces that pull the enterprise away from the attractions of cosmology in a strong sense. First, there are frequent expressions of concerns about the extensions of theories into times spaces and conditions so far beyond any possible experience as being too obviously and strongly speculative — and hence blurring a contrast to

empirically ungrounded speculation which is important for the self-understanding as holders of a modern, scientific worldview. Secondly and more interesting: there is a drive, within the speculations of modern physical cosmology, towards the transcendence of cosmology into the paradigmatically modern enterprise of epistemology. At least in some of its versions, the so-called “anthropic cosmological principle” (Barrow and Tipler, 1986) amounts to taking the cognizing human subject as the ultimate ground of cosmic structure.

This, of course, echoes the classical modern move made in philosophy by Kant: the subject is very much involved in timing, spacing and other formattings of the cosmos — but from a pure place, completely beyond and before cosmic content, and in a way which is completely independent of its will, attitudes, history, anything — and thus beyond any real or dangerous or committed involvement with the cosmos. This is the very sophisticated kind of innocence known as transcendence, much more difficult to lose, but I believe the work presented at this conference (this paper was a lecture at ***) is a very good shot at it.

2.2 Copernican shifts, centres and edges

I am not going to enter a detailed discussion of Kant now. All that we need to play with at this point is his powerful idea that space, time, causality, etc. are universally present structural elements of everything, not because they are in things themselves, but because things are always given for a subject and a subject must format things thus in order for them to be available for it. For Kant, there is no question of different times and spaces, there is one kind, corresponding to the coordinates of classical physics, which must be already installed for there to be anything to experience or handle, that is, for there to be any thing. All that is important here is that the structures of time and space are given a priori in and with the subject — nothing in the world, and nothing that the subject can do in the world, can affect them.

Kant himself used a very interesting metaphor for his transcendental account of time, space and other orders as the subject’s construction from its own pure place: the copernican shift. Just as Copernicus gave a better account of celestial movements by the radical reconfiguration that displaced to the periphery the entire earthly world that used to be taken for the centre, and shifted the sun into the centre instead, so Kant found that a radically different and much better account of the structures of experience could be given with pure subjectivity shifted into the central position.

The image of Copernican shifting is used very frequently to convey modern a-cosmicity in a way which may seem at first sight to say the opposite of what Kant is saying. It is the story of the displacement of the well-known homely sphere of

human life, from the centre of the cosmos. I trust you all know this story well. First, the story goes, the Copernican model of the planetary system moves us out of the centre of the spheres. Then, Darwin and others gives the human species an ordinary place amongst living things. Our entire history — with cultures, tools, religions, wars, sciences, etc. — is but a tiny fraction of the immense timescale of nature, etc. The moral of the story is that of a modern virtuous humility: we should renounce on any assumption of cosmological significance to our own being, doing or preferences. Of course this fits perfectly with Kant’s point: if at the end point of the cascade of copernican shifts there is human dignity and an available, ordered world, this is true only by virtue of the subject’s formatting of something so utterly foreign and shapeless that cosmos would be a very unfitting word.

This, on the other hand, ensures that within the world for us, there is an order which is much more secure, and provides for the subject a much more special place, than anything that could be arranged by friendly gods or anything else merely part of the world. I submit that this humility is false, is in fact a cover over a megalomaniac belief in the power of human subjectivity as something absolutely over and above this world, and that in fact we are very dependent on such worldly allies, and also on foes and other co-constructors of the cosmos, if we are going to have any real dignities and orders.

2.3 Where and when?

All of this serves as a backdrop for the question I ask in the title. The question is all about expressing a good, strong, a-modern sense of timing and spacing — which I think is very much the drift of this conference — and for this we need the resonance of the cosmos.

It is pretty clear that the species of spacing and timing processes that this conference ventures to explore are mostly far beyond the kind of productions of time and space within the one kind of cosmology sanctioned by the exception mentioned above, modern physical cosmology. The practices and organizations we are to discuss is something that goes on in physical regions much closer to the regions that we inhabit and handle, if anywhere.

The shift from time and space to timing and spacing is a kind of loss of innocence. I think this conference has been on the track of the loss of cosmological innocence right from the first call for papers. I am very much in favour of the loss of innocence, but I am just worried that it could be all over before it really gets interesting, if we fall into the Kantian habit of assuming 100% guilt. This is what happens as soon as we give in to the temptation of saying that timing and spacing is our doing. Individually or collectively, that difference is minor.

This returns me to the factory clock that I just said, with Hegel, we need to devour and recognize as Spirit's own doing. So let us say that someone — myself, for instance — would make the reasonable claim that the factory clock instantiates timing of a very specific kind, producing a structure that enables certain commodities to be compared, exchanged, transported. Now, the training in the critical traditions of modern philosophy — a kind of activity often legitimizing itself just by demonstrating that it can critically expose amodern tendencies of cosmologizing — lures one into asking a certain kind of rhetorical question that first I thought to be so embarrassingly naive that I would not bring it up in a serious discussion of timing and spacing practices. It certainly is embarrassing, but thinking about it I have found that perhaps we can push it to a limit where it can begin to do useful work. It goes like this:

If time is produced in timing activities, when — at what time — do you suppose these activities themselves take place? Similarly, where does spacing happen?

The question is designed to make us oscillate between two extreme kinds of answer, equally absurd and equally acosmic. One says that there is always already an underlying true time and space — something in the order of Newtonian absolute space and time — for timing and spacing to take place in. The other says that something is going on which is going on nowhere and at no time, because it is a precondition for space and time. So that timing would be either superfluous or impossible.

This formal dilemma is not the interesting part — what is interesting is how the dilemma misses the kind of timing and spacing we are interested in here. What is naive in the question is the assumption that time is one unambiguous structure, that it comes complete with all the classical moments of before-after relations, passage, durations, simultaneity, etc. So, if we are to answer the naive question in a way that respects the exploration of concrete spacing and timing activities, we will have to say that timing and spacing are activities proceeding gradually and partially, so that there can be a more vaguely determined space and time for them to proceed from, and that times and spaces can become more sharply determinate through them. There are ongoings and rhythms, already more or less temporal, for any clock to receive and digest, and no particular timing produces time so complete and unambiguous that further timing of it — calibrations, adjustments — is unnecessary.

It is tremendously important that we can begin to see the cosmos participating, lending a hand so to speak, in the work of timing itself. When science and technology studies begin to focus on nonhumans, inscriptions, material agencies, organisms and artefacts — and not just subjects and societies — this helps overcome a blind spot,

the cosmological spot, in modern philosophy of time. It is probably not mainly or not at all for the sake of the philosophy of time or us philosophers that these studies do so — but they do open a field of sensibilities and metaphors from which we can begin to reconstruct temporality, a middle world between the absurd extremes of absolute, unconstructed time (the time of Newton) and purely subjective, constructed time (the time of Kant -- so perfectly congruent with that of Newton because it only turns it upside down).

Another essential building material for such a reconstruction, this time from within philosophy, is the development of an explicit metaphysical concept of process. A slowly emerging side stream of the philosophical tradition, notably Hegel, Bergson, Deleuze and particularly Whitehead, have been working systematically towards replacing the traditional metaphysical framework of time and substance with one of process. In a catchword-like phrase, while we used to think that we must dichotomize everything into changeless pure content (substance) and contentless pure change (time) in order to speak of things with logical clarity and consistency, we are now discovering that it is also possible to navigate, even without renouncing on systematic language and understanding, in an impure, non-dichotomized world. This does not mean that talk of time and substance should from now on be regarded as philosophically suspect or logically unsound, of course, but it means that they should not necessarily be taken as primitives, they can also be taken seriously as very important achievements. There is no space and time here for anything like an adequate account of Whitehead's process metaphysics, but I would like to stress one very central aspect. In a world of processes, Whitehead says, there is a very general class of dynamic ("genetic") relations and, within it, a more specialized group or possibly several specialized groups of "morphological" or "extensive" relations. Dynamic relations have to do with the way processes take in their environment (all made of input from other processes, of course), take shape from it, digest it, and pass on input for further processes. Dynamic relations also connect very strongly with the dynamic inner characteristics of the processes themselves which have irreducible moments of becoming, striving and creativity. This overall picture of processuality is relevant to the business of timing and spacing in two important ways. First, it supports and generalizes the idea that agency is not restricted to the species or society of humans: if Whitehead is right it is absolutely all over the place, although of course to degrees which can be astronomically different (as most of us can probably confirm just by observing our own vastly variable degrees of enthusiasm and laziness...). Secondly, it shows timing and spacing as very deeply connected with other businesses, to the extent that what makes something an act of timing and spacing is not some inherent quality (like an inherent clock or measuring rod) but the way that certain aspects of its dynamic relations fit into a pattern of relations which collectively satisfy some simple formal requirements. Whitehead took great pains in developing

mathematical models of ways such formal structures can arise or be cultivated in a world of processes that does not come with any preexisting clocks, rods or systems of repetition (Whitehead 1929).

Whitehead's process metaphysics makes it possible to answer our embarrassing question: timing and spacing are certain kinds of organizing features of groups of processes, whereby they organize an environment which is already partly and multiply organized by its constituent processes. The more or less unanimous traits of organization which are already around offer a way -- often many ways -- that a where and when of the organizing activity can be pointed out, re-found, coordinated with others: the roman empire, the clockwork, the landscape of trails and landmarks, the physical states characterizing the epochs of the first "minutes" of the Big Bang. As a result of a timing and/or spacing activity, the corresponding kind of extensive relation becomes available, superimposing, sometimes enhancing and sometimes blurring or destroying, patterns of organization that were already there, some of them already possessing the minimal formal characteristics of the extensive. Timing and spacing, thus, are neither in an untimed and unspaced world, nor do they merely reflect extensive orders that was already unanimous and complete.

I end this second movement by mentioning a couple of other consequences that would follow from such a view of timing and spacing as processes going on in a thoroughly processual cosmos which lends support, on the one hand, to this kind of controlling and coordinating activity, but which is also full of dynamic relations which do not necessarily correspond to sharply defined points or sections of the resulting space and time.

The contrast of technical time and lived time has been stressed by Bergson and other aesthetically inspired critics of the modern, disengaged, controlling attitude towards life and nature. The process view allows us to affirm that there are dynamic streams in life — in anything, really — which will only vaguely and partially fit into schemes of extension. The kinds of process which would offer the the toughest resistance to extensive analyses would be those of greatest complexity and creativity, in short, those that have most agency. However, this would be a question of degree: there would always be something, much or little, that could be captured. And something else, much or little, that couldn't. Bergson's favourite example is the ongoing, connected process of an entire human life, which is said to be available to conscious experience only in near-death experiences. I would like to mention the smaller but still significant example of children learning, a process which escapes capture by sequences of singular questions, answers, etc., but is very available in a mode of participation. What the process view allows us to add is that the sequencing, controlling mode can in fact not suppress the participatory mode, it lives in and by

it, adding another strange gray color to the colorful life rather than reducing everything else to gray — a point beautifully made in (Latour, 1997).

The process view allows us to take this even one step further. Relations of dominance are not static, they are themselves in process. Inescapably and insensibly, by controlling and sequencing things we modify who the subject is. In Deleuze's strong words, we become fantastic machines and animals (Deleuze, 1968). Again, this does not at all have to be taken in the reductive, critical sense that we lose our true or original life. In fact, technical mediations are also the most intimate, hands-on, direct, digesting participations in the cosmos. Therefore they are our chance of new, more direct and complete understandings of cosmic processuality, if we can learn to take them this way. I believe the process philosophies of Whitehead, Deleuze, Hegel and others provide wonderful interpretative keys to make visible the way that bodily involvements, multiple meanings and distributed subjectivities emerge in the middle of technical projects that are, on the face of it or in their own self understanding, all about predictability and controllability by a fixed, immutable subject.

In the last few pages I have drawn a few points from the more or less established school of process philosophy. But I hope it comes through that my business here is not to impose any particular results or rules upon the study of timing and spacing, from platforms within philosophy. There is at least as much learning to do the other way, from such studies and for philosophy. The schools of philosophy in general are very much an expression of the aging a-cosmic modern spirit, and I think it is significant that philosophical developments of concepts of process metaphysics have been mostly informed by new problems different from those pursued within the traditions of philosophy -- problems of biology, mathematics and physics, in Whitehead's case. There are many other movements in the loss of cosmological innocence, to be enjoyed elsewhere.

Notes:

(1) This paper could have pursued a more familiar cluster of discussions about constructions of time and space, namely that of their fascinating formal properties, starting out, for example, with the perfect spheres of the Timaios rather than the hemisphere of the Pantheon, and followed the trail of Zeno's paradoxes and Aristotle's aporias. This would have been a discussion of the pure formal structure as such. Here we pursue, instead, the issue of constructedness and its involvement with power, legitimacy and organization of practices. Elsewhere I have discussed the interaction of these two levels of the construction of time and space (Hansen 2000).

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