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# Physics Unbound

By Sebastian Olma

Sebastian Olma sees a surprising reemergence of Bergson in Peter Lynds' novel theory of time

[IMAGE]

The publication of Einstein's 'On the Electrodynamics of Moving Bodies' revolutionised our understanding of time. What was to become the most famous paper of 20th century physics created turmoil in 'God's sensorium' which, according to Newton, constituted the proper place of time. Time no longer served as an absolute repository of mechanical movements but became the numerical multiplicity of space-time relations, determined by rulers and clocks. Now Peter Lynds, a 27-year-old broadcasting school tutor from Wellington, New Zealand, has published a paper in the August issue of *Foundations of Physics Letters* that has stirred up the international physics community once again.<sup>1</sup> Lynds attacks physics for upholding what he considers the nonsensical notion of time as a succession of precise static instants. If there were such things, Lynds argues, it would logically follow that the world would remain frozen at a precise instant, 'as though stuck on pause or freeze frame on a motion screen.' This could not be changed by postulating a continuous sequence of further instances, since it is the logical nature of frozen instances not to have duration. Thus, in its own understanding of time, physics prohibits continuity and motion to take place. The solution Lynds offers is the fairly outrageous claim that time does not exist at all – or at least not in a way that can be grasped by conventional physics. Time has no existence as physical quantity: 'This may seem somewhat counter-intuitive, but it is exactly what is required by nature to enable time (relative interval as indicated by a clock), motion and the continuity of a physical process to be possible.' Lynds has also managed to solve Zeno of Elea's infamous motion and infinity paradoxes. (The arrow refuses to reach its target just as the tortoise forbids Achilles to overtake only if the value of their respective positions is assumed to be precisely determined. Such a precise determination would result in the impossibility of changing this position, since in order to proceed to another precise value, it would first have to proceed to half that value, then to half that value, and so on.) As Lynds comments, 'With some thought it should become clear that no matter how small the time interval, or how slowly an object moves during that interval, it is still in motion and its position is constantly changing, so it cannot have a determined relative position at any time, whether during an interval, however small, or at an instant.'<sup>2</sup> One of the interesting things about Lynds' solution to Zeno's paradoxes is its echoing of Henri Bergson's treatment of the problem. In fact, Lynds' critique of time as physical quantity can be seen a reemergence of Bergson's project in physics – with a 100 years delay. For Bergson, Zeno's paradoxes were due to the illegitimate identification of movement with the space upon which it supposedly takes place. What is being attacked by the unlikely couple Bergson/Lynds is precisely the confusion of intensity (movement, quality) with extensity (space, quantity). Notwithstanding Bergson's obvious shortcomings in dealing with general relativity, *Duration and Simultaneity* did correctly reproach Einstein for reinforcing this confusion. Although relativity theory did away with the idea of absolute time (time independent of things), it introduced the idea of a multiplicity of mathematically discrete space-time blocs/events, thus upholding an essentially spatialised notion of time. The question now is not so much why Lynds suddenly talks about the non-existence of time as physical quantity, thus invoking a time that Einstein did not believe to exist and that he denoted 'philosopher's time',<sup>4</sup> but rather, why Lynds' ideas have such an astonishing resonance among the physics community. The answer may lie in the historical context of such 'time-revolutions'. Einstein, far from being the detached, other-worldly genius of popular myth, was of course not only very strongly embedded in the cultural and technological zeitgeist of mature industrial capitalism but also among the foremost experts on time-keeping and synchronisation technology due to his work in Bern's patent office.<sup>5</sup>

Consequently, Einstein's time emerged at the heart of a historical movement characterised by an ever tightening disciplinary grip. Crudely speaking, Einsteinian time was the time of the confinements, confinements that needed co-ordination. Factories, hospitals, colonies, prisons, etc. formed veritable space-time blocs whose relative position to one another was of vital importance for the workings of the system as a whole. In retrospect, the disciplinary society at its apex seems rather likely to have propelled the emergence of a notion of time as 'being kept' in little space-time containers. From such an historical perspective, then, the reemergence of Bergson's critique of extensity is today far from surprising. It coincides with the completion of the long durée of capitalist extension. Globalisation has ended some decades ago, followed by an accelerated intensification that Negri, Lazzarato and others have begun to describe. This is not to say – as some do – that space disappears. It only disappears as pure quantity in order to re-emerge as a problem, as something that is suddenly invested with time/quality but not as a succession of concrete, confined blocs but as virtual flow. As modernity's confinements are collapsing, time/quality does not lend itself so easily anymore to spatialising imagination. The phenomenon Lynds articulates is thus isomorphic with post-disciplinary ontology as it finally hits the last bastion of modern epistemology, i.e. science. In this sense one could understand quantum mechanics as the link between Einstein and Lynds: the 'smearing out' of (subatomic) space-time containers as the physical analogy of time/quality (Foucault's pouvoir-puissance) beginning to leak out of the porous walls of modern confinements. Maybe such an immediate understanding of ontological isomorphism is pushing it a bit far. In any case, what these analogies try to suggest is that Lynds' problematisation of time appears in fact to be quite timely. It coincides with capital's increasing virtuosity in managing the problem of the immeasurability of social creativity.<sup>6</sup> The biopolitical machinery of unmediated appropriation is already successfully operating on the virtual flows of social creativity – one might think of the project-form that organises most of today's immaterial labour, the productivity of internet consumers, or the countless interactive starlet-creation games on television. Even these few examples indicate that capital has well understood time as highly productive virtuality, as qualitative duration. The fact that physics is now catching up on the issue of time offers as promising or bleak a prospect as the 'discovery of time' does for our life in general. As Lazzarato, drawing on Bergson, suggests, the machinery that results from such an appreciation of time/quality 'could either support our "active becoming" or rigidify us in passivity.'<sup>7</sup> Time – of which, as we have to be aware, our own creativity is an essential feature – will tell.

1 The relevant paper can be found at  
[<http://doc.cern.ch/archive/electronic/other/ext/ext-2003-045.pdf>]. Unless otherwise specified quotes from Lynds are taken from this paper

2 Jones, Brooke, 'Ground-breaking work in understanding of time', at  
[[http://www.eurekalert.org/pub\\_releases/2003-07/icc-gwi07270](http://www.eurekalert.org/pub_releases/2003-07/icc-gwi07270)]

3 Bergson, Henri, *Duration and Simultaneity*, Manchester: Clinamen (1999 [1922])

4 Discussion with Einstein, in: *ibid.*, p. 159

5 On the very interesting detail of Einstein's embeddedness, see Galison, Pete, *Einstein's Clocks, Poincaré's Maps*, London: Sceptre (2003)

6 On the problem of measure see Hardt, Michael & Negri, Antonio *Empire*, Cambridge, Mass.: Harvard, (2000) p. 356 *passim*

7 Lazzarato, Maurizio, *Videophilosophie*, Berlin: B-Books, (2002), p. 27

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