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# Space, Time, and Becoming

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2013

## **FICHA TÉCNICA**

TÍTULO: **Space, Time, and Becoming**

AUTORES: Vários

EDITORES: José Croca • Pedro Alves • Mário Gatta

EDIÇÃO: **Cátedra A Razão**  
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Impressão e acabamento: Graficamares, Lda.  
R. Parque Industrial Monte Rabadas, 10  
4720-608 Prozelos - Amares

Depósito Legal: 369636/14

ISBN: 978-989-98797-0-6

## Chapter 8

# The Bergsonian intuition of duration: the time of science is space

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### 8.1 Abstract

According to Bergson, the philosophical tradition had been unanimous in declaring the question of time essential. However, it had neglected its correct framing<sup>1</sup> which, for the author, lies in the metaphysical approach of an immediate and inner experience of concrete duration.

In the current paper, we shall present Henri Bergson's concept of time, particularly the author's critique to the scope scientific discourse has of this concept. Simultaneously, we shall explore the central role of time in the Bergsonian thought, metaphorically understood as *the very stuff of reality*. We shall not, therefore, ex-

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<sup>1</sup>DS [2], p. Vi.

plore Bergson's ideas on Physics, but some of the metaphysical consequences that he withdraws from certain physics' concepts or theories<sup>2</sup>.

## 8.2 Science and Philosophy

Invoking Henri Bergson's thought in such a seminar reveals the up-to-datedness of a work whose philosophical obituary was announced several times over the twentieth century. We think that, in spite of the fact that some of his scientific work is outdated, the Bergsonian thought continues to allow for a fecund and profitable dialogue between science and philosophy.

Bergson was a French philosopher who lived from 1859 to 1941, the author of a *corpus* devoted mostly to the concept of time (or *duration*, as he prefers to call it), and who invested most of his education in the study of the sciences of his epoch (from biology to physics). As a product of the second half of the nineteenth century — an epoch which, as we know, was epistemologically prolific —, Bergson understood from the beginning the indispensability of connecting the philosophical activity to the scientific one. That would be the only path to grasp the whole of reality.

Nevertheless, Bergson also criticised the importance given to scientific knowledge by counterpointing the discredit devoted to metaphysics, a position that earned him some discomfiture in posterity. Aware of such unpopularity, a 75-year old Bergson acknowledges in 1934 that:

“[...] c'est par erreur qu'on ma classé parmi les contempteurs de la science et de l'intelligence; mais peut-être suis-je un peu responsable de cette erreur, car j'ai toujours insisté sur le côté intuition, connaissance de l'esprit par l'esprit, qui me paraissait avoir été négligé par les philosophes, alors que je m'étendais moins sur ce qui était admis par tout le monde pour la connaissance de la matière, pour la science proprement dite, pour l'intelligence. Dès «L'Évolution créatrice», cependant, j'ai exposé tout au long que l'intelligence, tournée vers la matière, pouvait, dans ce domaine, atteindre l'absolu ; j'allais donc aussi loin ici dans le sens intellectualiste que «tout le monde», plus loin même ; je mettais la science plus haut que ne le faisaient et que ne le

<sup>2</sup>A Portuguese version of this text was submitted and approved for publication in *Kairós*, *Revista de Filosofia & Ciência* 4: 87-104, 2012. Centro de Filosofia das Ciências da Universidade de Lisboa. The author gratefully acknowledges that this paper has been improved by the discussion held with the audience after the talk.

font encore la plupart des savants).”<sup>3</sup>

The confusion had arisen from one of the main propositions of the Bergsonian thought: the intellectual function has for its chief object the unorganized solid, that is, it is designed for action (it operates through solid perceptions and firm concepts so that the subject can place himself or herself in the moving reality that involves him or her). The image used by the author to illustrate this thesis is that of a cinema projector which creates the illusion of movement through the quick running of a set of photographs: for Bergson, movement exists objectively, but intelligence deals with snapshots, closed representations of reality, letting escape what intimately links each of these instants and unifies them in a constant and continuous becoming.

Thus, intelligence does not naturally tend to speculation, and is destined to think about inert matter. All theoretical-speculative type of thought is to Bergson a kind of evolutionary luxury, since it is action that allows us to survive in the environment where we belong. In this context, science is a kind of prolonging of intelligence's usual knowledge, consisting in the perfecting of rigour, of precision and scope of intelligence's common data<sup>4</sup>. Science operates by reducing reality to a sameness capable of a rigorous symbolic translation, hence mathematically founded.

According to Bergson, science should function together with philosophy (metaphysics), which provides it guidance. Philosophy is the inversion of the usual direction of thought<sup>5</sup>, reconvertng the subject's attention from the useful and pragmatic dimension of reality to the useless region. That is: philosophy breaks with the dynamics of intelligence and science, having as function to promote the knowledge of facts and laws going beyond them to reach their *deeper causes*<sup>6</sup>, which is what Bergson refers to in the excerpt quoted as the knowledge “neglected by philosophers”, the spiritual or metaphysical level. The philosophical activity rejects, thus, intelligence as a practical faculty and guides itself beyond scientific interpretation — which cuts reality's moving essence into differentiated and external pieces — and strives to apprehend that becoming.

The author would systematize his positions on that subject in the introduction to *La pensée et le mouvant. Essais et conférences*, Bergson's last work, published in 1934.

<sup>3</sup>C [1], p. 1470.

<sup>4</sup>Bergson understands that evolutionarily, the intellectuality of the mind and materiality of things arose from the inversion of the same vital movement by a process of mutual adaptation, cf. EC [3], p. 207.

<sup>5</sup>PM [5], p. 214.

<sup>6</sup>EC [3], p. 195.

There, Bergson refuses the instauration of a hierarchy between science and metaphysics, assuring that both can *touch reality's substance* ("toucher le fond de la réalité")<sup>7</sup>. Science does it on the realm of physical matter, through intelligence's capacity for abstraction and generalisation. From mathematics to biology, including physics and chemistry, science is founded in positive experience and reaches the essence of reality in what concerns its material dimension. Yet philosophy or metaphysics, having as starting point the subject's internal experience (positive also, due to that), reaches a rigorous and precise collection of knowledge about the non-material region of reality. The relationship between both is, then, one of complementarity: science provides metaphysics with elements for the construction of precise perspectives positively founded; philosophy fecundates science and reformulates it, allowing it to advance in the dominion of matter according to the ultimate causes.

Albeit the conciliatory tone of this text, which had in mind to refute some of the objections collected by Bergson's thought over the years, science and metaphysics are landmarks of diverging directions of thought. Never does the author waiver this premise. Science walks towards matter; metaphysics guides itself by the non-material (by the spirit). Now is our job to question, in what concerns time, what each one has to say.

### 8.3 A philosophy of time

If we wanted to sketch the main premises of a Bergsonian philosophy of time, we could isolate the following topics:

1. time as a substantial reality<sup>8</sup>;
2. time as a psychic (*the very stuff of our life*) and ontological (*the very stuff of reality*) phenomenon;

<sup>7</sup>PM [5], p. 33.

<sup>8</sup>The issue of substantialism in Bergson's work can be controversial, given the nuclear role that mobility plays there. In the text *Introduction à la métaphysique*, from 1903 (PM [5], p. 211), Bergson identifies reality with a principle of mobility, that is, in his perspective there are not things made, but things in the making, not states that self-maintain, but changing states. However, this does not mean a de-substantialisation of reality, since Bergson's philosophy does not do without the notion of 'substance'. He considers fundamental what he calls *the persistence of the existences*: reality is change and change is the very substance of things. The fundament of reality, what supports it and intimately involves it, consists in what our inner perception captures, that is, the substantial duration of things. Substance is movement and change and these, in turn, hold a substantial character.

3. time as duration (passage; transit);
4. duration as invention, acting upon the subject's life and upon reality (radical novelty and unpredictability);
5. duration as a privileged part of reality (refusal of the classic premises of Western metaphysics);
6. refusal of time as a measurable quantity, similar to space (refusal of Kantian thought);
7. refusal of an abstract time, not perceived and experienced concretely by the subject.

None of these premises can be deduced only from scientific knowledge, since to Bergson science represents time as a series of consecutive instants, numerically apprehended, which can be reduced to extremities of intervals or of moments, of virtual halts of time's true flow. Once the essence of time is exactly to *pass*, to flow, this means that it can only be apprehended when passing, not when halted. In this case, it is philosophy that can account for this intertwined intimacy of instants and reveal time as continuity, an indistinct interpenetration or qualitative multiplicity.

What is left to science then? Or, in other words, to what do sciences refer when they refer time? To Bergson the answer is clear: they refer to space. Even the most advanced physics theories about time (Einstein's Relativity Theory, at the epoch) would still be to Bergson a translation of space into mathematical (immobile) terms (limited to counting simultaneities between the events and the positions of a mobile on its trajectory).

Let's wander briefly through the genesis of this idea, so that we can follow the author in the discovery (or intuition) of duration as real time.

#### 8.3.1 The intuition of duration

It was Bergson himself who realized the importance of the process of intuition of time as *duration*, having in several occasions told the story of that moment<sup>9</sup>.

Around 1883, Bergson was teaching in the countryside (at Clermont-Ferrand) and, due to the PhD thesis he was working on, he devoted himself to the study of the work *First Principles*, by Englishman Herbert Spencer, the important theorist of

<sup>9</sup>The best-known one can be found in the Journal by Ch. Du Bos, in the entry dating of 22nd February, 1922, and is reproduced in the *Œuvres. Édition du Centenaire* [4], pp. 1541-1543.

a scientific law of evolution adaptable, without exception, to the whole of reality. By analysing precisely Spencer's chapter on the notion of time, Bergson recognised the insufficiency of the mathematical and mechanical perspectives, and found it odd to recognise that nothing would be altered in our representation of things if the relation of velocity between the instants symbolised in scientific language changed:

“Poser qu'un événement se produira au bout d'un temps  $t$ , c'est simplement exprimer qu'on aura compté, d'ici là, un nombre  $t$  de simultanéités d'un certain genre. Entre les simultanités se passera tout ce qu'on voudra. Le temps pourrait s'accélérer énormément, et même infiniment: rien ne serait changé pour le mathématicien, pour le physicien, pour l'astronome.”<sup>10</sup>

Then, Bergson's suspicions were still vague, he would confess later. What was clear to him was that if everything in the Universe was to happen in an instant, science would not need to change a single comma in its analysis of reality. There seemed to lack, then, to the scientific concept not just the internal dynamics which should characterize time, as mainly its account as invention (*Time is invention or it is nothing at all*, states Bergson<sup>11</sup>). It was then necessary to find a discourse that could find real time, the dynamic and creative force of reality.

The path to follow would come to him during a class on the paradoxes of Zeno of Elea, in which Bergson concluded that the origin of such sophisms lies simply in the confusion between the concepts of movement and of space. In the several paradoxes proposed by Zeno, the movement was erroneously deconstructed in a tight collection of parts exterior among themselves, similar to the image of the space traversed by a mobile. Even though the geometric line of the trajectory could be divisible into several different and exterior parts, the same could not be said about the movement. The instants that have gone by (or flowed) may be projected spatially, but the flowing itself of these instants, their movement or becoming, cannot. That is, the scientific thought illegitimately deconstructs the movement into a series of successive points and considers that it apprehends them on the whole, when in fact it leaves out transition, the passage, duration itself. Because intelligence naturally tends to crystallizing the moving reality into discontinuous and immobile units, Zeno's paradoxes resulted into logical paradoxes.

It's in the text 'La perception du changement', a conference presented in Oxford in May 1911, that Bergson brings forth the most didactic of all his explanations on the issue. In a captivating style, he states that the safest way to overcome

the paradoxical situation to which Zeno's arguments lead would be to interrogate Achilles himself. Once that, in fact, Achilles reaches the turtle and even overcomes it, only the testimony of the former could explain Zeno's theory. Bergson presents Achilles' decisive revelation, that is, the way as Zeno describes his race does not correspond to the way he actually runs<sup>12</sup>: the contradictions pointed out by Zeno refer not to the movement itself but its artificial representation by thought. Bergson states that intelligence naturally retracts in face of the anticipation of the difficulties that understanding the movement, in what it has of movable, would bring to the mind. By searching for a credible explanation, the sensorial data are as if crystallized by intelligence in fixed, stable perspectives and the uninterrupted flow of reality falls out of sight. The gravest result of Zeno's exercise consisted in the quantification of reality, forgetting the real as qualitatively indistinct and continuously fluid.

Zeno confuses two concepts that are clarified by Bergson as totally distinct dominions: the *duration* of the real movement and the *extension* of the geometrical representation of that same movement. The line that we measure is immobile, but time is mobility. Duration consists of a continuous flow where things pass and are created, by insensitive and indistinctive gradations, from one state to the other. Its representation in a spatial extension corresponds to the interruption of moving continuity and is equivalent to the suppression of the inner tension that constitutes movement. Thus, Zeno's sophisms (and all the Western metaphysics that followed) represent the opposite of what a philosophy that intends to think the inner character of movement should do, that is, the sophisms conceal the mobility that constitutes their substance.

The problem that Bergson puts to the reading that a mathematically-based science presents of time should be then put like this: how to reconstruct *what is being made* with *what is made*?<sup>13</sup> How to speak about the *process* in a language fit for *results*?

If the essence of time is to flow, it cannot be put in terms of the juxtaposition of instants in space because in the exterior of the subject there is always and only one single present moment: when a moment in time is presented, none of the following ones is still in presence (or none of the preceding ones); and when those other instants present themselves, what we feel now (and all the previous ones) have passed. In time what matters is not, thus, a collection of moments registered. This register exterior to consciousness (be it in a line as the mathematical sciences do, be it in a clock or a calendar, as we do every day) only accounts for what is already done, over, dead, in a word. What matters in the discourse about real

<sup>10</sup>PM [5], p. 3.

<sup>11</sup>EC [3], p. 341.

<sup>12</sup>PM [5], pp. 160-161.

<sup>13</sup>EC [3], p. 312.

time is the mobility or transition that allows flowing from one instant to the other. Better even: the mobility which allows *creating* one instant from another.

Again Bergson's awareness of the two dimensions of time is here present: its essence while flux and while continual growth and creation. This concept of time — the *time of consciousness*, as the author refers<sup>14</sup> — is what is constantly making itself and is what makes everything happen. Whatever the measuring system we use, duration as an inventive and inner process being made shall never be included.

Actually, the mistake goes back to the originary structure of intelligence and to what has been previously referred to as its natural hypostasing tendency. Bergson presents a clear example: when we say, "The child becomes a man", we take childhood as a defined *state* or a thing perfectly outlined. The passage of that state to another radically different state, as the reality of adulthood, is not apprehended by thought. I.e., bestowing the attribute 'man' to the subject 'child' becomes unintelligible: when we can attribute to that subject the quality 'man', then he no longer will be a 'child', and while he is, thought cannot bestow that adjective. Reality, which in itself consists of the *transition* from childhood to mature age, vanishes in this logical impasse, since intelligence retains only the notions of 'child' and 'man' as tight frames or imaginary halts of a process. The verbal form 'becomes' [*devient*] holds an undetermined meaning and just aims at unravelling the contradiction or paradox that intelligence sees in the referred proposition. Due to the impossibility of uttering this transit that constitutes the real movement or duration, we mentally juxtapose the thing or the 'child' state to the thing or the 'adult' state, in the attempt to account for the evolution from one to the other. We compose change as a series of tight and instantaneous images and, furthermore, we take these 'pictures' to be reality itself. In Bergson's own words, *reality has slipped between our fingers*<sup>15</sup>.

Again the famous metaphor of the cinema projector is here useful: the movement projected by this device is merely an illusion since it limits itself to juxtaposing a continuous series of photographic images so that its rapid projection mimics the real movement constitutive of the reality that these images symbolize.

It is certain that it is only because man holds the possibility to employ this illusory subterfuge of thought — treating as still things what is truly the flow of the permanent becoming — that it is possible for man to act upon what surrounds him. By occurring in the heart of a reality that is essentially movement, action requires

these *static habits of intelligence*<sup>16</sup> for the subject's guidance and orientation.

Nonetheless, even if our intellectual functions aim, firstly, action, when it comes to capturing real time, the time that consciousness experiences and that acts on reality, it is necessary to renounce to intelligence's proper structures, replicated by science, and access the metaphysically-based inner sense. What, in the above mentioned example, means the perception of the child that becomes man by intuition of the authentic reality, in which the syntactic subject becomes the intrinsic and substantial movement that characterises it: "There is becoming from the child to the man".

It was this intuition of duration that led Bergson to reject the scientific data as a means of perception of real time. This idea imposed itself on the philosopher with such might that enlightened all his thought in such a way that Bergson confesses to have believed that this plain enunciation would make everyone coalesce<sup>17</sup>. He would later find out that the condemnation of the scope of intelligence and, consequently, of the scientific knowledge of time, would be harder to accept either by scientists or by philosophers.

### 8.3.2 From the time of science to the time of consciousness

The time of science is, then, just a residue of true temporality generalized from a reduction of reality to a unifying sameness. Duration is hardly translated by thought in terms of our intellectual functions because it consists of a multiplicity of the qualitative or indistinctive type. Different from the quantitative numerical multiplicity, whose elements are distinguished in space, the indistinct multiplicity of duration consists, to Bergson, in a pure succession with no distinction<sup>18</sup>.

Bergson refuses the gemination of time and space, rejecting the latter as homogeneous and empty, the exterior form of the measurable units, which contains them and allows them to be told apart. In itself, space only allows for the representation of present moments, leaving aside the previous instants (registered only in the memory of consciousness) and duration itself.

When referring to real time as duration, Bergson seeks a pure heterogeneity in which there is a succession of qualitative alterations, which interpenetrate without precise outlines and which do not exteriorise themselves mutually.

<sup>14</sup>PM [5], p. 3.

<sup>17</sup>*Œuvres. Édition du Centenaire* [4], pp. 1543.

<sup>18</sup>E, p. 74 and following.

<sup>15</sup>EC [3], p. 312.

When thought illegitimately brings the idea of space into the representations of reality, it presents the several moments of the cosmic becoming simultaneously side by side. The pure succession is crystallized in a continuous line in which the different parts touch each other without interpenetrating and, as happens with the display of a clock, the before and the after are perceived simultaneously. This simultaneous level allows the ordained and distinct juxtaposition and succession of instants in space. The time of clocks, sand clocks, calendars, is the time of sciences as mechanics, astronomy or physics, time as measurable and homogeneous, a simple *space phantom*, as Bergson puts it<sup>19</sup>.

The question must be asked then: if real time is duration and duration means the absence of all and any idea of space, for what reason thought persists in the misunderstanding of real time as a homogeneous medium where events enroll themselves?

Bergson answers by articulating time as a psychic reality and as an ontological one. That is, intelligence stains the duration with space because things outside ourselves endure as we do, being their duration irreducible to ours. Let's explain.

Outside the subject's mind, in the spatial representation of simultaneities, we find a *mutual externality without succession*, that is, the time instants measured and represented by science and by common sense constitute parts that present themselves as juxtaposed extremities without the inner connection that creates and reveals them. Inside the subject, in the inner and continuous life of consciousness, there is, on the contrary, a *succession without mutual externality*. Things thus perceived do not present themselves with defined outlines, but meet in constitutive interpenetration, composing the authentic pure succession (succession without distinction). As mutual externality without succession, science accounts for disconnected and tight extremities; as succession without mutual externality, consciousness captures the intervals of passage or time flowing. Space separates the time instants, annihilating the duration, which is passage; consciousness that endures unites the succession in the qualitative indistinctness.

However, because succession in consciousness happens at the same time as the exterior movements that seek to represent it, for example in the display of a clock, the mind has gained the habit of dividing duration in the same way as it divides its spatial extension. We are not the only ones to endure in the Universe, duration or temporal flowing pulses everywhere. Then, at the same time in which I perceive the present moment represented in the clock's display each time the hand reaches a new position, I have an inner representation of the moments that same clock hand passed and, without realizing the mistake, attribute to the procedure of measur-

ing the same characteristics of consciousness' flow of inner duration. Assisted by science, intelligence geminates time and space and considers both as homogeneous media where phenomena are inscribed, eliminating mobility from movement and duration from time.

We go back to the objection that Bergson had vaguely formulated when he had studied the mechanical fundament of Spencer's theory: because the intervals of duration between the instants do not count for science, if these were two or three times quicker, nothing would change in mathematics, physics or astronomy's formulas. A close reader of the scientific literature of the epoch, Bergson here went back to the hypothesis of the universal growth of velocities, usual at the time, seeking to withdraw from it some metaphysical consequences.

In this context, Bergson understands that science showed itself impermeable to the hypothesis of universal and simultaneous acceleration of all movements of the universe, but consciousness didn't. If all the velocities of the universe were changed in the same proportion, the consciousness which accounts for the duration as a non-measurable flow would immediately apprehend the discrepancy between the exterior flow of things and the flowing of inner life.

It is, then, in the inner knowledge of consciousness (in the *intuition*, act of coincidence of consciousness with the moving reality), as an actor and spectator of that same knowledge, that real time can reveal itself.

The passage of the time of science to the time of consciousness is developed by the author in the controversial work *Durée et simultanéité*, written in 1922, and dedicated to the debate of Einstein's Relativity Theory.

## 8.4 The nature of real time

### 8.4.1 Bergson and Einstein

The relationship between Bergson and Einstein has had several interpretations, philosophical and scientific, and is regarded as an embarrassment that biographers and commentators of the French thinker have tried to explain. *Durée et Simultanéité* was published after the difficult debate which took place between both of them at the *Société Française de Philosophie* in April 1922.

*Durée et Simultanéité* rejected the restricted theory of relativity and took side with the unit of a real time, stating that there should be an equal time for all observers

<sup>19</sup>Ibidem, p. 80.

(the time of the consciousnesses). We shall not analyse in detail or criticise Bergson physics' arguments. However, it is important to enhance that it is not as a physicist that Bergson addresses the theory of relativity, but as a philosopher. This means that his analysis and discussion of relativity did not envisage the scientific fundamentals of the theory, but its metaphysical interpretation.

Far from intending to physically certify his thought on time, Bergson finds in the discussion on relativity an opportunity to rethink (and revalidate) his philosophy of duration, mainly in what concerns the relation between the experience of time and its measure. And he will conclude that Einstein had mistaken time for space and that the new theory of relativity refers to a purely mathematical temporality restricted to calculus. This time that relativity tells us about cannot be considered a *metaphysical reality* or even a *reality*, concludes Bergson, once that it is real only what is given (or can be given) in an experience; in other words, something whose existence goes beyond the level of the mathematical calculus<sup>20</sup>.

We go back, then, to the last topic we systematised on the Bergsonian conception of time: real temporality is a singular act, that is, it states itself as cadence for a specific conscience, as duration.

According to Bergson, in the theory of relativity the Newtonian scheme of a single and absolute reference system in measuring time disappears, being replaced by a collection of equivalent systems from which the physicist should adopt one. By doing so, only the time within this reference can be considered as real, because it is experienced by the singular consciousness of that physicist. All the remaining systems will become virtual (represented only as real by mathematical calculus). It will be based on this difference between the "real physicist" and the "virtual physicists" that Bergson will reject the relativity of time, considering that real time is only the time of the real experimenter: there is only time in the system which, each time, the physicist chooses as reference<sup>21</sup>.

The philosopher then opts for a unique real time, a fact that remains enigmatic for the Bergsonian work experts, mainly after Bergson having stated that there is not a single rhythm of duration of the consciousnesses, but multiple durations (even if the mind has the habit of, erroneously, represent a homogeneous time), and proven the irreducibility of the duration of things to our own inner duration (in the famous example of the water glass with sugar, we have to wait for the sugar lump to sink and dissolve in the water, which means that its duration cannot be reduced to mine but operates in a different rhythm). However, and as Elie During puts it, it is necessary to clarify that Bergson does not mean a return to

the Newtonian absolute time, which would be equivalent to a mathematical time conceived homogeneously and confused in an equivocal manner with space<sup>22</sup>.

After the 1922 debate between Bergson and Einstein, both recognised some communication flaws<sup>23</sup>. In 1924, two years after the debate and the year of the publication of *Durée et Simultanéité*, Bergson got involved in a polemic with a French physicist (André Metz) in the *Revue de Philosophie*, having the polemic quarrel ended with the publication of a letter by Einstein acknowledging the misunderstanding of Bergson on his interpretation of the theory of relativity. Subsequently, Bergson interdicts the reprint and translation of *Durée et Simultanéité*. Yet, it is worth mentioning that in 1934, when he publishes his last work (*La pensée et le mouvant*), Bergson restates in a footnote the positions on Einstein's theory of relativity held 10 years before<sup>24</sup>.

#### 8.4.2 Time as the foundation of things

*Durée et Simultanéité* can be seen as the most technical work written by Bergson, filled with equations and mathematical symbols, thus also being, due to that, the most intricate from the philosophical viewpoint. Nevertheless, it stands out in the author's *corpus* because it's the only one of his books that not only includes the concept of 'duration' in the title, but also dedicates a whole chapter to the nature of time. For these two reasons, it cannot be ignored.

What then is this work's contribution to the way Bergson thinks time? Essentially, it's a systematization of the author's positions and a translation of his main intuition: when thinking time, the primacy lies in the flowing and not in what flows, in the process and not in the results, in the interval and not in the instants. The things, the states, the instants, the moments are instantaneous photographs taken on a transition. The duration immediately perceived is, in this case, a kind of inner memory (not necessarily in the anthropomorphic sense, but as an elementary memory that connects two instants<sup>25</sup>) of the flowing itself, which prolongs the *before* into the *after*, unifies them as parts of a same movement and stops them from disappearing in the fugacity of the present<sup>26</sup>. In this context, we could say that duration is what allows us to construe ourselves as historical beings and that

<sup>22</sup>Cf. Elie During, "Bergson et la métaphysique relativiste" [6].

<sup>23</sup>Einstein states that Bergson had not understood him (Benrubi, *Souvenirs sur Bergson* [7], p. 82) and also Bergson stated, two years later, having been misunderstood by Einstein (C [1], p. 1122).

<sup>24</sup>PM [5], p. 37, n. 1.

<sup>25</sup>DS [2], p. 46.

<sup>26</sup>Ibidem, p. 41.

<sup>20</sup>PM [5], p. 37, n. 1.

<sup>21</sup>C [1], pp. 1119-1122.

it is, furthermore, the fundament of our own identity.

Duration is the qualitative continuation (and non measurable or capable of being exteriorised) of what is not anymore into what still is. And the power of the 'qualitative' adjective can be explained in one more of the didactic Bergsonian images: let's listen to a melody with eyes closed, without imagining the notes that compose it drawn in the score or even the pounding of the fingers in the piano keyboard. When we perceive it as indivisible and don't isolate any of its sounds, we shall experience the pure succession, multiplicity without divisibility or qualitative multiplicity. Or even when we run our fingers through the surface of a paper sheet, again with eyes closed: it is when we open our eyes that we see the line drawn by the course our fingers took, until then (and if I don't represent that same line in my imagination) I have the inner perception of duration.

It means then that there is no time outside consciousness (even if elementary and impersonal) capable of retaining the before in the experience of the after. It is in the inner sense of the (of one) consciousness that real time can be found. This — we emphasize — does not mean that Bergson considers that time exists only for the human consciousness, since in *Durée et Simultanéité* he undoes the anthropomorphism of the notion of conscience and places it at 'the foundation of things'<sup>27</sup>. Now what objectively exists is the flow of the creative and continuous becoming. The instants are merely virtual halts that the thought instinctively delimits and that are analogous to the mathematical points.

In *Durée et Simultanéité* Bergson states that, besides the simultaneity of instants which allows us to tell time from a clock's display or read it in a mathematical representation, there is equally the simultaneity of flows in the several consciousnesses. Without this flow simultaneity, there would only exist the duration of each subject and it would be impossible to communicate and also scientifically represent time.

Having then admitted a plurality of durations, this could maybe be the point in which Bergson could have coalesced the physical meaning of relativity. Instead, he concludes that it is in this simultaneity of flows that is founded the equivalence established by intelligence between the inner real duration and the time externally transformed into space. And opts for the unit of a unique Time.

We come to an end by restating the interpenetration of science and philosophy as one of the qualities of Bergson's work. Acknowledging the scientific misunderstandings in works as *Durée et Simultanéité*, namely in what concerns the physical theory of relativity, is not the same as condemning the reflexive importance of Bergson's thought, neither does it impede that it carries on making us think in

concepts so structuring as those of space, time and becoming, which is the main goal of this symposium. Furthermore, the Bergsonian work insists on the importance of non-scientific knowledge, metaphysical in this case, in an adequate framing of our knowledge of reality.

Be it in the moments, in his work, when he is closer to the scientific discourse, be it in his philosophical reflections, Bergson struggles to defend the universe as continuity of creative and creating change. It is in this context that duration comes up as the inventive nucleus of the continuous creation of what is qualitatively new. And it is on behalf of that inner time that endures that Bergson implements all the speculative options which give reason to his positions. Mostly those that deal with the boundaries of scientific knowledge.

<sup>27</sup>Ibidem, p. 47.