

**From Space *and* Time to the  
*Spacing of Temporal Articulation:*  
*A phenomenological re-run of Achilles and the tortoise***

**by  
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...time is that which makes itself, and is even that which makes everything to make itself.

Henri Bergson<sup>1</sup>

**1. Present Time and the Time of Presence**

In view of the primacy assigned to the 'present' in traditional metaphysics, in terms of the ways in which questions about existence are expressed, the following discussion takes the question of the temporalizing of the present as its theme. This involves unravelling the historical traces of the thought of the present as a finite, closed, objective point of a successive continuum of discrete moments (a real oscillation between the now and the not-now) by returning to the phenomenological sense of the present as the stretching out of an opening – the 'living Present' (*lebendige Gegenwart*) – which bears its continuity of presence and non-presence within itself (without restriction to linearity). The transition itself suggests something like a quantum-leap and, in another sense, it also extends beyond the bounds of this simile (and the discontinuity that is implied) by evoking the image of a 'twist' or a 'turn.' In order to grasp the significance of this turn we shall first examine – *re-turn* to – its main obstacle: the concept of time as a linear and corpuscular continuum.

The traditional model of time as a succession of 'now-points' (a notion that

still infects discourse on temporality) has always undermined our understanding of 'presence' as that which maintains itself (abides) through succession. In effect, presence must be 'maintained' [*maintenant*] within the 'now.' Yet, if the 'now' is constantly shifting into non-being through its replacement by a new 'now' then presence must be infused with its own negation and a certain discontinuity. How is it possible, then, to speak of the 'persistence' of 'identity' as something unitary (simultaneous with itself) existing through plurality and successive fragmentation into non-being? Furthermore, in reference to motion, what is entailed in the possibility of experiencing the transition of a selfsame (particular) object from one spatial location to another: how is it that the object 'endures' through its spatial and temporal transition?

Since antiquity the question of simultaneity has been taken for granted – generally being consigned to mere spatial models. In fact space itself has often been thought to be a kind of non-temporal container in which all the points of, or within, that space are simultaneous with one another (e.g., Newton's model) – a horizon of absolute co-existence. Even the very term extension, when used to describe duration, is implicitly understood to function primarily as a 'spatial' expression or metaphor (consider, for instance, the meaning of *res extensa* in Cartesian dualism).

Spatially extended identity and difference (themes which often play key roles in the manner in which the question of presence is addressed) are generally defined in terms of simultaneity, i.e., 'particular' objects can be said to be differentiated if they occupy different spatial locations at the same time. Two spatially extended objects (we exclude gases, holograms, or metaphysical notions of ether) cannot occupy the same place contemporaneously (within an order of co-existence[s]) – they can only do so at different times (within an order of successions). Therefore, it is the question of succession that has traditionally taken central position in discourse about time without giving due regard to the question of the temporal conditions of possibility that are actually constitutive of simultaneity. However, presence or, more specifically, some extant 'thing' must somehow be 'coincidental' with itself in its 'extension' through time. In these terms, succession and simultaneity are equiprimordial with one another. From the point of view of 'presence' (as that which is said to be in-the-present), each can only really be understood in relation to the other. We may well ask whether, in this sense, time and space are so inextricably linked that we can only really speak in terms of (cosmological) 'spacetime' – or, in

consonance with Heidegger, (existential-phenomenological) 'time-space.'

Relativity has seriously shaken historical complacency about the meaning of presence and what we now understand by the term simultaneity: the contemporaneity of two objects being relative to their respective velocities, location (relative distances) and proximity to any local gravitational fields. In view of the more complex and sophisticated discourse on 'simultaneity' in Einstein's Special (specific) and General theories of relativity, it is obvious that if we continue to attach primacy to the 'present' – which has been traditionally conflated with 'presence' – then it follows that anything existing beyond one's immediate spatial location must be reduced to 'non-presence' or the 'irreal.' Given the finite velocity of light, the farther away an object is from the observer the farther it lies in the past. Does this post-Copernican reversal suggest a radical form of scepticism through which we are plunged into 'solipsism'? If privilege is given only to the present – where the past and the future are reduced to the status of the unreal – then reality, as Lawrence Sklar points out, is..."reduced to a point."<sup>4</sup>

What we have here is not necessarily the formulation of yet another paradox, but an opportunity for an imaginative and constructive turn, which can extend toward a thorough re-determination (beyond the bounds of a mere Euclidean geometry) of the sense, and thus the *horizontal* aspect and temporal stretch of the present and presence. To continue in this spirit, rather than allow ourselves to be swallowed up into an existence defined by immediacy and presence – which could be nothing more than an extensionless point – perhaps we can readjust our orientation in regard to the present and give the non-present its due. The hinge of this change in orientation demands an analysis that concerns itself with unearthing a more general and formal sense of extension, which releases it from the limiting parameters of a naive concept of spatiality. This also applies to the term spacing. As pure extending (stretching, giving, differentiating, delaying) it equally refers us to the tracing of temporalization. Such temporal-spacing is the 'opening' that makes room for simultaneity and succession.

We do not so much see simultaneity and succession as we simultaneously and successively *experience* 'things' that show themselves to be 'extended in space' and 'persisting / extending through time' – which means that we must fully take into account the temporality of the observer in any analysis of the temporality of the observed.

By employing a number of phenomenological and deconstructive moves during the course of these analyses, the balance of attention must inevitably be tipped from the limits of a mere analysis of 'things' – and their spatial and temporal determinations – to a more transcendental and formal exploration of the 'space' of 'duration' itself, in abstracto: extension as pure extended-extending

This strategy is facilitated by focusing on a number of key contributions by twentieth century phenomenological research (as represented by the work of Husserl and Heidegger), which have served to radicalize the treatment and conceptualization of time in contemporary philosophical thought. Moving through the traditional notion of time as a linear string of discrete 'nows,' which are inexplicably held together, to a Hegelian reorientation in which the time-continuum is thought in terms of a process of dialectical shifts between being and non-being, we shall explore the implications of Derrida's deconstructive re-reading of Aristotle and Hegel (in "Ousia and Grammé") in relation to the Husserlian and Heideggerian phenomenological treatment of the 'dimensionality' of the 'now' (where the interplay of past and future, as given through retention and protention, constitutes the temporal flux through which the *living* 'now' emerges). All these analyses focus on a 'horizontal' approach to time and succeed in showing how the 'now,' far from being considered in a discrete sense, intrinsically carries its no-longer and its yet-to-come with it. This opening upon the question of the constitution of the 'now' and the peculiar character of its spannedness completely disrupts the common notion of time as a stream of concrete, individual now-points (a line of corpuscular moments – which is no longer accepted as an adequate model of temporality, but still infects our language as surely as when we say that the sun rises when we know that it is our horizon that is sinking because the Earth is rotating).

These issues reveal themselves in their proper light through a return to the original question concerning the present as opening. Our point of departure in section two (following some preliminary remarks regarding the methods at work here), begins with an analysis of why Zeno's treatment of motion in the tale of "Achilles and the tortoise" (which refers us to this question) is such that it leads to paradox. This involves...

1. An exoteric approach to the problems inherent in Zeno's 'narrative' – which serves to highlight how this specific application of the *reductio ad absurdum*

technique of argumentation leads to contradiction precisely because it does not take account of 'lived-experience' – the Living Present.

2. A phenomenological-deconstructive reading – which articulates the ways in which the logical dynamics operative in the tale of "Achilles and the tortoise" present us with the task and the means of re-thinking the 'now' and the space-time horizon in general.

By outlining the conditions that are absent from this paradox, e.g., temporal rhythms (from a phenomenological point of view) as opposed to mere mathematical co-ordinates (the scientific hypostatization of mathematical point-models), and by carefully analyzing some of the implications that arise from a spatial model that stresses the infinite divisibility of any given magnitude or distance between two points, we gain access (through the application of this same model to temporal duration) to some of the crucial problems that are intrinsic to any concept of time that unquestioningly orients itself according to a 'naive' (objective, essential, and merely linear) view of the 'present.' Accounts of this kind include such perennial questions as, on the one hand, whether time is a kind of container or, alternatively simply an aggregate made up of discrete chunks (now-points / atomic moments) somehow strung together. In regard to the latter we have to inquire about the kinds of conditions that must be implicated as constitutive of the 'continuum' through which these moments find their unity through succession and, in the case of the former, we need to ask whether time can be considered, in some sense, to be distinct from its 'tenses?'

This exercise in phenomenological-deconstructive reading allows us to demonstrate how Zeno's paradox of Achilles and the tortoise and the exigencies implied by the infinite divisibility of space (in a model that is equally applicable to time), effectively shows that 'discrete' or 'atomic' moments are fictions. This is not, by any means, to deny the validity (and urgency) of a discourse that takes the question of the 'reality of the now' as one of its themes. Rather, it is the expression of a change in orientation, which demands that we must (and this is the 'phenomenological' element of our analysis), re-determine its *sense*.

But first, some preliminary remarks are required concerning the strategies that must be employed in such a reading of Zeno's paradox.

## 2. **Zeno's paradox – Achilles and the tortoise: *the expression of an ontological defense, an epistemological aim, or a form of deconstruction?***

Most of what is known about Zeno (a native of Elea [Velia] in Italy, approx. 495 BC – 430 BC) is through secondary sources (in particular, Plato's *Parmenides* and Aristotle's *Physics*). 'Achilles and the tortoise' is, perhaps, the most famous of his paradoxes, though 'the dichotomy,' 'the arrow,' and 'the stadium' are almost as well known. In fact and in principle, all four formulations overlap with one another. There are some rather perplexing elements in these so-called paradoxes that have helped, indirectly, to shape the controversies that still persist in the various ways in which we speak about space, time and the nature of their relation[s]. Zeno's arguments effectively establish the need for a distinction between sequences of 'now-points' and actual 'duration.' Now-points merely function as arbitrary parameters, schematic limits, to the latter. However, the now-points and their spaces-between are the quantitative elements which, from an instrumentalist perspective, go to make up our conception of space and time; units of measurement, as logical / ideal constructs, which do not simply 'measure real' spatio-temporal change and duration but 'define' them. But, what of space and time themselves, which must, in principle, be distinct from the ways in which they are measured and thematized? We are faced with a considerable problem if we assume that space and time when deprived of their various measured moments become nothing in themselves. Clearly a different line of approach is needed in order to avoid thinking in terms of such absolutes. Zeno's paradoxes force us to think very carefully about what we actually mean when we make space and time themes of discourse – particularly when we ask about the 'sense' of their existence.

However, we shall see that Zeno's 'strategy' (which seems, according to a traditional reading, to advance an extreme form of scepticism) does not address the principal problems involved in our understanding of these fundamental forms which structure the horizon of experience. He does not actually engage with what generally concerns us about temporal duration – the persistence of themes through change (continuity), temporal rhythm, motion, simultaneity and succession: how time articulates itself within 'lived-experience' as the condition of the possibility of any

experience. However, it can be argued that this is not in any sense simply an oversight. We can legitimately treat it as an index to his specific aims – which might be read, only provisionally, as constitutive of a kind of negative theology.

Actually, Zeno's aims are critical rather than constructive or merely destructive. By pushing the 'objective' notions of space, time and motion to their limits, his tales assume the form of paradoxes precisely because they situate themselves within the same operative objective schemata – thereby bringing about their collapse from within. Our task is to explore the possible ways in which the fundamental elements of their breakdown can be drawn from in a positive manner. It is the moment of *aporia* (as articulated within Zeno's paradox of Achilles and the tortoise) that necessitates a shift from the language of 'objective time' to that of the temporality of 'lived-experience.'

Strategically positioning itself, as it does, within the traditional parameters of an 'objective' notion of reality, (where the criteria for the establishment of what is 'actual' are shown to break down), Zeno's paradox consistently produces a sense of discomfort by its suggestion that Achilles can never actually reach and overtake the tortoise: a discomfort that cannot be remedied within the specific parameters of the tale itself. One often feels inclined to simply cut the Gordian Knot by dismissing its narrative boundaries as the expression of a mere a pseudo-problem in concordance with Aristotle's position in the *Physics*.<sup>6</sup> We wish, however, to extend beyond a traditional approach to the paradox. We may begin by outlining two possible readings of Zeno's motives.

- a. A hard interpretation, which situates his application of the *reductio ad absurdum* dialectical technique within the boundaries of a particular ontological doctrine – that of the Parmenidean notion of Being.
- b. A softer reading, which situates the implementation of his techniques within the sphere of epistemology – without commitment to a 'particular' ontology or epistemological 'viewpoint.'

Zeno's *reductio ad absurdum* method of argumentation is employed as a means of forcing an opponent into either accepting an illogical conclusion or into reaching a logical conclusion unacceptable to common sense (which is why Aristotle

considered Zeno to be the inventor of dialectic). Could it be said that Zeno's application of this technique comprises both method and motive? It can be suggested, in accordance with the hard interpretation, that the motive is none other than Zeno's intention to defend the 'absolute monism' propounded by his teacher Parmenides (born, 515 BC). In the remaining fragments of his poem *On Nature*, we find a specific ontological stance, which states that Being is eternal, unitary, indivisible and unchanging: 'that, which is, is; and that, which is not, is not and can never be.' However, this implies that the world of change and motion is illusory. It forgets time and assigns reality status to that which is *a temporal* or, more precisely, that which occupies an eternal present. This is, of course, in diametrical opposition to Heraclitus's (540 BC – 480 BC) doctrine of flux: where that which exists is a becoming, 'passing over into what it is not and was not.' The dialectic operating at the heart of the Heraclitean ontological schema illuminates the threefold temporal horizon of existents, where that which *is* passes over to what it *is not* and *was not* – which is the present surpassing itself towards the future in reference to that which has been surpassed: the futural-becoming-past of the present.

Alternatively, the softer reading suggests that Zeno is only objecting to the common 'language' of change and motion by showing that it is insufficient in grasping their nature. The hard reading, as suggested above, implies a metaphysical decision on Zeno's part that effectively interprets his arguments purely in terms of a defense of Parmenides's notion of reality – in which only that which is eternal, motionless and unchanging *really* exists. This also implies that the soft reading is at work – although only playing a subsidiary role. However, in principle, the latter [b] can be studied in isolation without involving the former [a].

By suggesting that Zeno's arguments merely show that the 'sense' of the 'real,' in classic objective terms, is grasped inadequately and that traditional discourse on the real necessarily terminates in paradox, this implies that his 'paradoxes' play the role of breaching the objective 'classical language' of reality from within its own sphere without offering an alternative theory that would supplant it – the 'double-tongued' aspect of his discourse. In this case, emphasis is placed on the 'return of the question' and not on its resolution in the form of a conclusion (which would otherwise speak, in anticipation of the Heideggerian presence in the second half of this essay, of the de-temporalizing drive towards closure and the negation of anxiety and uncertainty – since this generally takes the form of a merely expedient imposition

of a limit to the 'passage' of the question). In this case, the *reductio ad absurdum* technique may be said to comprise both method and motive in such a way as to be an embryonic form of deconstruction that does not necessarily presuppose the ontological standpoint of [a].

However, we are still troubled by what is tantamount to the claim that given the limits and contradictory nature of popular discourse on change and motion it makes no sense to speak of their 'existence.' Clearly, the insufficiency of Zeno's account of motion is an index to a number of operative, but unthematized, conceptions of reality, change, continuity, space and time that must be permitted to open themselves up.

By first employing an exoteric approach to the problems inherent in Zeno's narrative and then deconstructing the paradox at a deeper level, thereby exposing the conditions lacking from the 'narrative' of the race that make the tale a paradox, we shall see how Zeno's arguments can be read as expressions of a project which, in pushing the 'common conceptions' of space and time to their limits, thus causing them to fracture, opens up a space in which we may assume a more radical form of orientation. The logical moves initiated by Zeno can be appropriated in such a way as to effectively expose the arbitrariness of the various conceptualizations and ideas about what is meant when we speak about the 'reality' and 'measurability' of time and motion and the actual means we employ to carve up reality 'quantitatively' and, at the same time, they allow us to begin to unearth their shared horizon of intelligibility.

Accordingly, by focusing on some of the key ways in which time has been 'thematized,' we may begin to uncover what is intrinsically presupposed by them all. In the following description of the paradox, we can see that Zeno's narrative of the race forgets the issue of continuity and rhythm with respect to the inextricable relation between space and time in reference to the question of motion. By carefully unearthing what is at stake in reference to this forgetfulness, we argue that the internal dynamics at work in the narrative can be made to show (although this is not Zeno's actual intention): that the establishment of an *absolute* – non-perspectival or non-spatio-temporal – narrative form can only ever be illusory. Furthermore, it becomes clearly apparent that rhythm and continuity must be taken into account in any observation of spatio-temporal alteration and that the experience of spatial change must necessarily presuppose, what may be called, a 'temporal synthesis of spacing' – as the unifying field (horizon) for the experience of identity, spatial

extension, change, movement, etc. This, of course, is shown to bear no relation to a mere spacing between 'points' of time.

### **3. The Inexhaustible Distance and the Chimera of the Totalizing Narrative – *the tale of Achilles and the tortoise***

Other than a few fragments, none of Zeno's writings survive in their original form and so we are faced with a long history of paraphrase upon paraphrase. My own version of the tale can do no more than continue in this tradition, which goes something like this: Achilles and the tortoise enter into a race with one another. The tortoise has a head start of ten paces. The race begins. In order to win, Achilles first has to cover the distance between his starting point and that of the tortoise, but on reaching the tortoise's starting position he finds that the tortoise is a certain distance ahead. In order to pass the tortoise, Achilles must first reach the tortoise's new position. However, since the tortoise is continuing to move, Achilles, on reaching that point, finds that the tortoise is still ahead. And, so it continues – the gap is narrowing but with each successive move the tortoise is always still a little farther ahead.

The narrative form of the paradox is such that it implicitly sets up actual (and infinite) 'divisions' within and between time, motion and space, thus echoing elements of the other three aforementioned paradoxes – in particular, the dichotomy paradox. This means that...

- i. if each point of the transition of the competitors is a now or present (which is treated as an absolute criterion for the establishment of reality-status in a number of objective theories of existence) and...
- ii. if there are an infinite number of possible points between Achilles' position and that of the tortoise – through which each must pass if we are to speak of the existence of each protagonist and the reality of motion...
- iii. then, if Achilles is to *really* catch up with his opponent we are forced to deal with the problem of how an infinite series can be completed within a finite duration.

According to the most basic 'common sense,' one is inclined to object to this logical conundrum by arguing that Achilles must not only catch up with the tortoise, within a 'finite' distance and duration, but also go on to win the race within a finite duration. The crucial element missing from Zeno's formulation is actually 'time.' Although time is announced it is never really brought into account. But, what does it actually mean to say that Zeno has, in a sense, forgotten time? Is it so clear that if we rephrase the tale by incorporating time, in terms of a specific form of temporal 'measurement,' that the description of the race will become a little less bizarre? As it turns out, in the absence of a regulative principle prescribing 'rate' of duration (the rhythm of succession) it still remains problematic. Consider the following.

The race begins at 2:00pm sharp. By the time Achilles reaches the point at which the tortoise began, the latter is two paces ahead (Achilles' speed is two and a half paces per second, while the tortoise covers a distance of half a pace per second). By the time Achilles reaches the next point (two paces ahead) only four fifths of a second have elapsed. Meanwhile, the tortoise is now only two fifths of a pace ahead...

If we maintain this particular perspective on the movement we can see that the tortoise will still effectively remain in the lead. For Zeno, the infinite divisibility of any given spatial magnitude is equally applicable to time (duration), which problematizes the interconnected issues of motion and continuity. The actual mode of measurement at work in this particular description of the race as it unfolds is one which, like the first, merely marks the increasingly infinitesimal moments of possible duration / differences between two poles of what is actually a closed set. However, this is not to be understood in the sense that we can determine a finite number of possible subsets within its sphere because the progressive and potentially limitless advance into smaller fractions obviously precludes closure 'within' its horizon. What is meant is that there is no reference to either a common regulative medium (a timepiece or an observer) or the finishing post beyond, though in relation to, the two poles. In our modified narrative of the race we are simply measuring smaller and smaller 'pieces' of time where the tortoise's advantage is the principal 'constant' of the equation. The tortoise behaves as a regulative principle: an asymptotic point.

If we transfer the constant from the tortoise's lead to the ratio between a particular (defined) 'duration' of time and the 'distances' covered by each opponent in

that time i.e., their respective speeds (defined by our instruments of measurement – types of clock) then it is clear that Achilles will reach and begin to pass the tortoise within a finite duration (Achilles' speed being a constant of two and a half paces per second – in other words, he is 'covering a greater distance in a shorter space of time' than the tortoise).

What sense or value is to be found in a tale that merely emphasizes a changing relation of distance between two points that can be measured infinitely? There is not an explicit reference to a third point, beyond the two competitors, which we would ordinarily take to be the finishing post – their shared objective, that which gives meaning to their activity. Also, there is no reference to our 'experience' of motion as something that happens within a regular temporal flow. Motion cannot be measured simply in terms of distance. It is rather like attempting to measure time with a yardstick<sup>7</sup> or using scales to weigh potatoes in zero-gravity. Zeno appears to ignore this when he spatializes time by expressing duration in terms of distances or gaps between points.

Not only does the scenario, as depicted by the narrative form of the paradox, conceal a 'fixed' parameter (finishing post) towards which 'both' competitors are meant to be heading, it also plays around with the sense of the 'time' at which Achilles reaches the tortoise's starting position (under emphasizing the 'finite space / distance' between their respective starting positions). The aforementioned fixed parameter is supposed to be the end-limit of the tale, but it remains under erasure. The narrative form employed by Zeno (which is the trace of this erasure) is such that the finishing post will always be ahead since this would presuppose that both protagonists have actually passed the point at which they were neck and neck with one another – which cannot happen. Although the narrative shows how the finishing post can never be reached this is not to say, however, that it does not play an integral role. Its absence speaks volumes. The failure to attend to this point is a primary index to what the narrative is actually doing. The full significance of this will become apparent shortly.

The true end-limit of this scenario is really the point at which both opponents would be level with one another. By saying that if Achilles is to catch up with the tortoise he must 'first' reach the point at which the tortoise started (but only to find that his opponent has moved farther on), Zeno strategically avoids the language of time which would otherwise provide the description of the race with the vital

temporal orientation through which the events would ordinarily be noted, thus robbing it of the elements which make the tale a paradox.

When we introduce the temporal element necessarily implied by any discussion of 'motion' according to a fixed mode of measurement, which acts as our constant, the events appear quite differently. It is of course clear that the inclusion of a specific mode of 'spatio-temporal' measurement<sup>8</sup> (two poles – 'distance' in 'time') can be quite arbitrary in terms of the kind of chronometer and mode of spatial measurement used e.g., we might speak of paces per second, feet per minute, kilometres per hour, etc. However, all of these rules of measure are constant in themselves – constants that allow us to quantitatively fix any spatial changes that occur in relation to them. Thus, speed is defined as distance travelled divided by duration.

However, this is all mundane! Quite apart from the objective (scientific) forms of measurement that are available to us we must consider the more original question of the 'lived-experience' of the spatio-temporal horizon. Ultimately, the 'narrative' of the race distorts the horizon of spatiality and motion by concealing the sense of the 'publicness' of time. If we were to 'observe' the race in action, as Zeno articulated it, then it would appear that the two protagonists were moving in a bubble within which time was slowing down.

It is here that we finally arrive at the primary core of this narrative form. As we have seen, the operative end-limit mentioned earlier, which would bring about closure to the sequence of events, is not the finishing post, but the point that Achilles must reach in order to be level with the tortoise. That is, given their respective speeds as measured within a regular temporal flow, both competitors would arrive at this point at a certain moment in time. However, this is also like saying that Achilles will not reach the tortoise until the time at which he reaches the tortoise. Since this closure can never happen within the parameters of Zeno's description, this point is the extreme limit of the imploding sphere. In other words, the distance between this parameter and the finishing post (a fixed point *beyond*) is never really 'articulated' as part of the schema. To make it fully thematic would not even necessarily help to resolve some of the difficulties, since it would still be susceptible to the limits laid down in Zeno's dichotomy paradox, where a finite distance cannot be completed if one must first traverse half of the distance of each successive move toward the termination point. Then again, one may apply this logic to the race between Achilles

and the tortoise as a whole and say that it would not even be possible for the race to begin.

In the specific case of the elusiveness of the tortoise (in relation to Achilles, who is in hot pursuit), there cannot be any termination because the race describes a passage toward a mobile and infinite limit – and it is this impossible limit that acts as the measure of everything else.

But, what does Achilles have to say about all of this? Perhaps we can approach this question in the following way.

What is significant about the narrative form is that it shows how the paradox undermines the myth of the 'privileged observer' – which is operative in objective theories of reality prior to relativity. The narrative, like all narratives, is 'positional.' In other words, it cannot describe events in their totality – 'totally' – but, merely according to a certain frame of reference by means of which these events are illuminated: that is, within the parameters of a certain *mode* of orientation. There is an inexhaustible array of possible perspectives separating the appearance of something as given by one form of narrative from that which makes its appearance – or rather, that which can be made to appear through a multiplicity of other perspectives. In effect, the horizon of that which appears is always in excess of any orientation (or series) that articulates it. This irreducible difference can be clearly explicated by showing how Zeno's narrative form may be used as an effective description of how a starship approaching the event-horizon of a black hole would *appear* to a distant observer according to the rules of Einsteinian relativity.

Consider the event-horizon (which is the point at which light can no longer escape the immense gravitational field of a black hole) as an analogue to the point at which Achilles and the tortoise would actually be neck and neck with one another. Since this point (within the boundaries of the paradox) is as inaccessible to the tortoise as the tortoise is to Achilles we can bracket the former. As the starship Achilles approaches the event-horizon the time dilation increases – thus, it appears to a distant observer that the ship is slowing down in proportion to its distance from the event-horizon. As far as the observer is concerned the starship will never actually reach it. The ship will come to *appear* suspended in space (or rather, the red shift would be augmented to the point at which the vessel simply faded from view). This is because time, as far as the observer is concerned, has slowed down in the vicinity of the spacecraft to such an extent that motion can no longer be perceived. But, what of

the occupants of the ship itself? Has the rhythm of their lived-experience of time undergone the same kind of shift? The short answer, according to Einsteinian relativity, would seem to be 'no.' The travellers would not necessarily register any change (assuming that they could survive the awesome physical stress) and they would indeed reach the event-horizon within a finite duration, finding themselves sucked inexorably into the singularity beyond.

In the language of spacetime, we can no longer speak in terms of a pure field of spatial co-existence or of a universal temporal constant regardless of one's spatial location (in relation to an observer), proximity to a gravitational field, velocity or acceleration. The only 'essential' constant in the Einsteinian grid is expressed in the form of the equation  $E=mc^2$  – which announces the relation between mass and energy (which were formerly thought to be *distinct* entities) at the speed of light: 300,000 kilometres [186,000 miles] per second; the finite speed of electromagnetic radiation as it propagates through a vacuum (the limitation of the velocity of light by which things make their appearance).

Objectively, there is no Absolute time. However, from a subjective point of view, temporal experience does have a certain kind of constancy of rhythm. Regardless of the lack of synchronicity between different time-frames in relativistic physics, the actual lived-experience of one's own time frame can be said to exhibit something of the Absolute about it.

Considered phenomenologically – that is, from the point of view of 'lived-experience' – we cannot speak of any change in temporal rhythm in regard to our own time frame (except in such moments when we might say that our life flashed before our eyes – but this is an entirely different phenomenological issue). To say that clocks slow down as they approach the speed of light is not to say that someone holding the clock will observe this phenomenon since his/her lived experience (e.g., bio-rhythms) will be undergoing the same degree of dilation. We can only speak of a change in the flow of time (its temporal rhythm) in reference to another time frame. Each of us already starts out from a certain spatio-temporal frame of reference, which *acts as our constant*. This allows us to mark any deviation that may appear in a different region of spacetime. Thus, we have a discrepancy between two different descriptions – the passage of the starship as it appears to its occupants and that which appears to the distant observer. This is precisely the problem of the intersubjective determination of simultaneity as raised by relativity theory. Given that we have two

completely different frames of reference at work here, we must always remember that the way in which an event appears is directly correlative to one's own point of orientation or perspective – in other words, the *narrative form* in which the events are reported. None of this sounds strange when Zeno's paradox is narrated by means of the logic of Lorentz Transformations and the non-Euclidean geometry of Riemannian curved space (for example, in Einsteinian General Relativity, travelling the shortest distance between two points is no longer a matter of traversing a 'straight' line since spacetime warpage / curvature has to be taken into account – thus, we have a 'geodesic').

Therefore, from Achilles' point of view, he does indeed catch up with the tortoise, but from the observer's point of view, he does not. Both viewpoints are correct – but only according to their respective frames of reference. In analogous terms, Zeno's narrative is limited to the reference frame of an observer for whom the two competitors appear to be slowing down.

#### **4. Infinitesimal Infinities**

Obviously, Zeno does not show the 'unreality' of motion since we do not grasp movement by simply adding together a finite (or infinite) number of different spatial locations. Motion is not a collection of 'parts' of space. According to the same logic, neither does he demonstrate the unreality of time (certainly not as Parmenides would have it). Keeping with our soft interpretation, Zeno brings to light the insufficiency of classical accounts of motion and time (which are delineated within a naive conception of reality, presence, the present) by effectively pushing them to their limits. From a contemporary standpoint, it is less a case of paradox than it is of *aporia!*

In many ways, Zeno's 'paradoxes,' when taken together, anticipate relativity on a macrocosmic level and, on a microcosmic level, they also anticipate quantum theory.

However, from a phenomenological point of view, Zeno, in bringing about a

breach by turning the schematic parameters of the classic conceptions of space, time and motion against themselves, utilizes a narrative structure that finds its form within an equally reductive programme that is divorced from actual states of affairs *as-lived*. The corpuscular concept of the present, which invisibly traces itself throughout the narrative (once again, the double-tongued stratagem), does not provide a sufficient criterion for any assessment of actuality. The narrative purports to be describing reality, while at the same time denying such a reality, without making 'thematic' those conditions presupposed by the possibility of doing so.

It is here that we begin to understand that the insufficiency of the narrative is precisely the direct consequence of an operative 'objective' notion of reality (or metaphysics of presence, which gives primacy to a point-like 'present') at work, providing its background horizon – a reductive sphere which must, if we are to escape paradox, ultimately give way to the 'ekstatic' horizon of 'lived-experience.' Therefore, the paradox only illustrates an unreality that is the consequence of the application of an inadequate conceptual framework. Its form emerges through its critical engagement with that with which it is, ultimately, in diametrical opposition – but *as* a diametrical opposition, it is still within the influence of its opposite pole. This conceptual grid, due to its concealment of the 'lived temporal horizon' (which we must consider as the primordial condition for the possibility of the articulation of the 'real'), merely describes the changing one-dimensional relation between two spatial objects by emphasizing a potentially infinite advance into ever more infinitesimal fractions. However, even here, time as the rhythm of continuous transition is necessarily implicated in the reference to 'change,' despite what we might call Zeno's 'strategic' forgetfulness.

Zeno's incorporation of time purely as a system of relations between discrete points is such that we find that there is a continuous advance into an infinity of reducible moments. He carves up smaller and smaller chunks of time. According to this description, would we not, then, have to speak of times rather than time?

There is an important sense in which Zeno is arguing against the hypostatisation of numbers and the sequences of points that constitute the various forms of measurement by which reality is defined – like the attribution of reality-status to a map rather than that which the map illustrates (although his own schema ultimately does the same). Schematically, these points are not time (or times) but can be said, provisionally, to occur 'in' time in the sense that they sequentially carve up

duration: number it. However, one would not designate one particular point of time, draw it out of a sequence, so to speak, and (in reference to the race) seriously ask for the speed at which the competitors were moving in-that-point-of-time (this recalls the paradox of the arrow and also, in more contemporary terms, it anticipates Heisenberg's 'principle of uncertainty'). There would literally be no 'room' to address the 'relativity' of the speed of each protagonist: the difference in distance traversed by each competitor (in their relation to one another) within a designated 'period' of time (duration). An 'interval' is defined through now-points, but it is not itself a point. By the same token, it is not simply a gap between points.

In these terms, when we speak of the now, we clearly mean something more than a mere point or a space between points. Is it not an 'open' horizon? Like the asymptotic tension between Achilles and the tortoise, does not the horizon of the 'now' preclude its own closure – its reduction to an extensionless point?

The application of Zeno's logic to the spacing of the now discloses its infinite divisibility. However, this is a 'closed' infinity that only frames the now microscopically. The now also overflows itself macroscopically. We speak in terms of – 'now, in this room reading this paper'; 'now, at my desk tapping away at this word-processor'; sitting here 'now, for the duration of this film'; right 'now' I am *waiting*; 'now, in this moment' or even 'now, in this second which seems like an eternity.'

When we consider duration in graphic terms it is generally illustrated as a line 'between' two points. Due to the arbitrariness of the 'application' of a quantitative grid (the application being that which provides *significance* to the way in which both time and that which is in time are addressed), both points are potentially infinitely extendible. By strategically suspending the synonymy which has often been attributed to the point, the now and the present, we shall retain the use of the word 'point' for purely schematic purposes while saving the question of the 'dimensionality' of the 'now' until later.

Interval is precisely relation and distance, similarity and difference, simultaneity and succession. Time is 'spacing.' The point is merely an ideal construct – a limit that stands out through a temporalizing horizon in which it only makes sense in its *relation* to other points on the grid (which marks out the continuum) of which it is a part. The grid defines duration (in terms of the way in which it is addressed e.g., as continuity of identity, change, movement, rest, etc.) in a regulative manner

according to various rhythms and sequences which, we shall argue, must already presuppose a temporalizing articulation of spacing – which is equiprimordially a synthesis – that originally produces the conditions through which these objective 'systems' can emerge.

These, then, are the central issues to consider in regard to the problematic narrative of the race. Of the various relations that Zeno does not take into account, if we wish to know when Achilles reaches and begins to pass the tortoise, the most decisive are the essential 'lived' relations between the competitors – which include their 'shared' objective *beyond* their changing spatial relations with one another and their 'relative speeds' (specific distances covered within a particular duration). These relations are given through a determined measurement of time which already presupposes a 'lived' rhythm / regularity in the succession of spatial changes / transitions that we experience and report as motion.

The meaning of the race is given through anticipation: that is, the intention to be the first to cross a 'finite' distance (arrive at a designated point – the finishing post – ahead of both opponents) is that which first determines the basis upon which the protagonists enter into any of the aforementioned relations, despite the fact that Zeno's narrative only really speaks of Achilles' intention to reach the tortoise (which is the 'closed' aspect of the inexhaustibility of their spacing). Who wins the race is determined by the 'time' (as designated by a regulative system, type of clock) in which it takes either competitor to reach it. According to our revised description of the race, which defines spatio-temporal change in terms of the regulative mode of measurement 'paces per second,' by the time Achilles arrives at the finishing post (one hundred and fifty paces from 'his' starting point), sixty seconds will have elapsed since the start of the race (assuming of course that his speed was constant).<sup>9</sup> The tortoise (equally, at a constant speed) can only manage thirty paces during this time-interval. After covering the first twelve and a half paces of the race Achilles can do nothing other than increase his lead on the tortoise rather than continue to lag behind in perpetuity, merely reducing a gap made up of infinitely divisible fractional distances that do not allow of closure.

Indeed, at precisely 2:01 pm., Achilles wins the race leaving the tortoise one hundred and ten paces behind him. The time at which Achilles caught up with the tortoise was five seconds into the race.<sup>10</sup> The distance covered by Achilles in that time was twelve and a half paces. The tortoise, on the other hand, only managed to

cover two and a half paces in that space of time (remember, his actual speed was half a pace per second). At last, Achilles finally manages to transgress the regulative limit (i.e., his competitor) imposed by Zeno's suspension of time (temporal rhythm), from the question of motion, in his unchecked fascination with asymptotic curves.

In sum then, Zeno's tale measures the distances between two simple points in a self-contained universe that is imploding, in its advance into the infinitesimal, infinitely. It is a sequence of ever more divisions unfolding through an interminable journey into the microcosmic – an asymptotic tension wholly uninfluenced by factors outside it. The tale is a paradox because of the reductive limits of its own sphere – which are not arbitrary constructions, but rather the result of *de-con-structions* of classical notions of reality, e.g., setting time and motion at odds with Being, analogously utilizing a 'positional' language that claims '*non*-positionality' when it fails to address the intrinsic relations between time and space through which we experience / register motion, etc. Motion is always about change and, since it always expresses Being in its verbal sense, motion always speaks of time.

The originality and thrust of Heidegger's existential-phenomenological analyses in *Being and Time* flows out of his recognition of the verbal aspect of Being – in the sense that verbs (in German) are known as time-words (*Zeitworte*). This guides his investigations on Being toward the transcendental horizon of Temporality (*Temporalität*) as the primordial opening of its articulation: it is always already the horizon in which Being must be understood.

Space, presence, extension, change, etc., are all terms which express duration as a tracing of difference in sameness and sameness in difference – a temporal-spacing. Clearly, without time (a signification that is in excess of that which Zeno attributes to it), we cannot speak of motion. It is *as if* Zeno, in opposition to this, attempted to employ Euclidean plane (flat) geometry to describe a globe (although the real merit of Zeno's formulations actually lies in the non-Euclidean elements by which proponents of a Euclidean world-view can do nothing other than declare them to be paradoxes or mere logical curiosities that can be resolved through simple calculus).

The regulative principle that allows the determination of 'rate' of motion is that which must be found within a spatio-temporal sphere (beyond that which Zeno's narrative discloses, and yet, as the horizon of the narrative form itself, necessarily infused within it) despite the image of an increasingly imminent, though

'interminable,' sequence of changing relations between Achilles and the tortoise. However, it is in relation to the question of the 'now' (as that which is considered to be the opening up of presence) that Zeno's disclosure of the infinite divisibility of any given magnitude (distance between two points) provides us with the clue for how we must proceed.

We must somehow try to visualize a *field of articulation* which, by the 'play' of its three ekstases (its temporal spacing and intertwining), is the primordial horizon through which the possibility of a particular definition of regular duration can emerge. But, what does this mean? We speak here of a *tri-horizonal articulation* that is in excess of the traditional determination of time – which provides continuity (relation through succession) throughout the *spacing* of duration (the opening up of motion / change and rhythm / continuity). In other words, we are looking for that which gives sense to the question of the reality of motion by unearthing the 'structurality' of temporality itself.

## 5. Time and Motion

It is always tempting to slip back into the classic controversy concerning the question of whether time *is* 'movement' or whether movement is *in* time. However, if we restrict ourselves to the parameters of 'either / or,' 'is or is-not,' then time itself will remain elusive. Should we not ask whether we can speak of time in any other way than in terms of a 'movement' (that is constitutive of a temporal horizon) or as a 'static' horizon (within which movement occurs)?

If time, as in the case of its determination by G. W. F. Hegel (in his dialectical phenomenology), is to be thought as an oscillation between being and non-being – in the movement of Spirit toward itself as Absolute (thesis, negation and the negation of negation [sublation]) – it cannot be reduced to either of its poles. Accordingly, should we not speak of the *horizon* of such 'oscillation' – that which produces the difference that is constitutive of such polar moments? In these terms, this is to say that time is no-thing, but the articulating horizon in which thing and no-thing are constituted by

their relations of difference.

Jacques Derrida, in the deconstructive essay: "Ousia and Grammé: a note on a note from *Being and Time*," writes..."time is 'spacing.'"<sup>11</sup> Spacing is the differing / deferring articulation of time – a temporal extending and differentiating, which sustains that which is in time through a sublated 're-lifting' (as opposed to an 'up-lifting' into a higher sphere). This essay is a Heideggerian lens-piece on Hegel and Aristotle – which provides us with a reading and, ultimately, a formulation – that brings to light (through that which is uncovered by Aristotle's exoteric approach to the question of time) an equiprimordial movement of transgression and delayed return articulated in the 'now.' This is a dynamic (dialectical) flux, which, from the viewpoint of style, evokes Sartre's notion of consciousness (Being-For-itself – *Être pour soi*) as a self-transcending ekstastic thrust. Time, when thought on the basis of the now, 'is what it is not and is not what it is.' Time is an articulating, an unfolding, which simultaneously folds in upon itself; a tracing that constitutes itself in the form of a horizon without being anything extant in itself. And, when Derrida writes about the opening up of spatiality according to Hegelian negation – the dialectical movement from point to line to plane, etc. – he reminds us that though time has not been mentioned, it is always already implied. The temporal horizon is not *present* itself, but is the opening – re-lifting / sublation – through which presence or its diametrical opposition (negation, as delineated from the point of view of presence / the present) occurs.<sup>12</sup>

Are we thus led to an idea of time in which it is not limited to its tenses – tenseless time? On the one hand, just because time is understood in relation to change, motion, succession, etc., is it to be limited to its tenses? On the other hand, without the tenses of time are we left with precisely nothing? Do not succession in general and the regulative means we use to measure / number duration actually 'define' time? Is succession time itself or that which occurs 'in time'? Notice how easy it is to be drawn back into the old controversy.

It is only when we begin to consider time in terms of an *articulating* as well as the articulated that we can actually address the possibility of even arriving at this form of problematic. When considered according to the horizon of Temporality (*Temporalität*) – in Heideggerian terms – it emerges as a mere abstraction of the language that first provides the possibility of its expression.

Tense is the principal determinant of the sense of movement, and yet tense is

not time but that through which we understand and mark time in terms of the passage of succession / duration (before, now, after). The horizon through which we experience succession / duration as opposed to any 'system of measurement' would ideally be the theme of our study, but it must be noted that the latter is the language in which we 'address' time. Can we still ask about the 'possibility' of this language given that it already expresses, in Heidegger's terms, spannedness, significance, publicness and datability? Is not the language that numbers, designates, directs itself *to* time, and that which is *in* time, 'produced' through a temporal articulation (*articulating*) that allows such language to function? Is not the language of time, indeed language in general, that which carries temporality with it through its own diachronic structure (which, in turn, points to its historical development)? Does it not already presuppose temporality as the horizon[s] in which synchrony is precisely the possibility of 'repetition' – a recursive fold through which language operates and structure and meaning is constituted and sustained?

To bracket the tenses of time would be to suspend the tri-horizonal articulation that provides the scope for the possibility of any language. We would, in this sense, rob time of its expression in that the temporal horizon would drift back beyond any orientation which would otherwise be reflected through the 'becoming' (the temporalizing / articulating) of that which comes to presence / present. The tenses are indices to the speaking-out of time in its temporalizing of presence: the interplaying moments that refer back to the 'articulating' fold through which they emerge without this tracing coming to actual presence by its being limited by them.

Earlier, we spoke of temporal measurement (the kind of chronometer we use) as that which 'defines' regular duration instead of merely reporting it. This is an important consideration, but it must not be interpreted in any way that might suggest that time is simply a concept. When we speak, as Heidegger does, of *The History of the Concept of Time*, we understand this in terms of a 'becoming' – a development that only happens through time. It is a mistake to consider time itself as nothing more than a metaphysical 'concept' (as Derrida is often inclined to do). We merely frame time by the use of concepts. Concepts in general, have a referential function in their capacity as unifying structures through which we thematize time and that which is *in* time. The traditional Platonic tendency to assign the 'sense' of concepts to an *a temporal* sphere misses the point that, as synthetic and synthesising structures, the formal content of any concept already presupposes a threefold temporal horizon (an internal historicity)

through which it is articulated – a temporalizing field through which it unfolds and, in the specific instance of concepts of time, that which the concepts strive to articulate. The main problem lies in limiting it to its form of expression: the articulated as opposed to the articulating.

The emergence of the concept of time in which primacy is given to the 'now,' without an equal attendance to the question of the possibility of its 'horizontal structure,' fails to address the ekstastic nature of Being – *ekstasis* [whose literal translation is 'other-than-static' or 'beyond-stasis']: understood in terms of its phenomenological-existential relation to the most fundamental character (or capacity) of existence – '*ekstatikon*' [to-stand-outside-itself]). In the phenomenology of Edmund Husserl, this is another name for the modern concept of *intentionality* – the dynamic-structurality / transitivity of consciousness. In the work of Heidegger, it is announced as the projected-projecting structurality of *Dasein* (there-being or Being-there) as care [*Sorge*].

The three ekstases in their interplay must be understood, according to Heidegger, in terms of..."a signification that *lies in advance of common time*."<sup>13</sup> Presence-at-hand [*Vorhandenheit*], readiness-to-hand [*Zuhandenheit*], relations of significance, e.g., states of affairs [*Sachverhalte*], meanings, etc., all have the character of 'persistence' or concreteness only in that they present themselves in a horizontal fold of the three ekstases of time – the three interweaving dimensions that express the 'extending' of absolute / primordial time.<sup>14</sup> The significance and primordality of this interplay becomes fully apparent when we attend to the question of the possibility of motion as the experience of unity through change (transition).

In the lecture, "Time and Being," Heidegger writes...

...the unity of time's three dimensions consists in the interplay of each toward each. This interplay proves to be the true extending, playing in the very heart of time, the fourth dimension, so to speak – not only so to speak, but in the nature of the matter.

The sense of this 'extending' can be further clarified by comparing it to Husserl's discourse on 'Primordial Flux' in his lectures on time consciousness (see *On the Phenomenology of the Consciousness of Internal Time [P.C.I.T.]*). Merleau-Ponty's discussion on the unity of time – which he expresses as *chiasm* – also bears this Husserlian trace and he anticipates Heidegger's formulation by several months

(see note 20).

The analyses, so far, have thematized how spannedness, significance, publicness and datability are the essential conditions of possibility for activities of measurement – in the sense that they express the *lived-horizon* out of which such language can be crystallized. The language of measurement is the language of objectification – which, in turn, always speaks of sedimentation and tradition, a shared cultural horizon, an intersubjective history. However, history, the very temporal spacing through which such language emerges, often resists adequate expression – particularly in the case of purely objective and reductive modes of concern – because of the limitations of the very *attitude* of inquiry through which it is thematized. There is a tendency in such forms of interrogation to focus on measurable quantities (in terms of that which the investigator already wants to find) to the exclusion of reflection upon its own *passage*.

We may move beyond this non-reflexive form of interrogation, by means of a careful study of the question of 'spannedness' which, incidentally, Heidegger was somewhat premature to consider in the same light as significance, publicness and datability. Spannedness is the formal condition of the possibility of all three – the 'space' (spacing) in which they are first announced and that which they announce. This is a horizon of pre-theoretical experience. The question of pure spannedness or extension is the focal point of our concluding phenomenological analyses.

Given that the 'points' of articulation (tenses), which express a particular mode of measurement (which, in turn, defines the way in which we describe temporal succession – its passage and rhythm) are not really intrinsic to anything beyond our conceptual horizon through which we make temporality our theme, we find ourselves on the brink of aporia. The expression of time by means of a clock allows us to measure duration (through its definition or projection of significance) and ultimately motion – but, the actual measurability of time is itself only given *through* motion, whether this is by the observation of the arcing of the sun or moon across the sky, by the movement of the hands of a watch, successive changes in number, or even, without access to a timepiece, the experience of the succession of one's own thoughts, or the beating of one's own heart.

As Heidegger writes, in regard to Aristotle's studies on time and motion,

Time is not motion...On the other hand, however, time also does not exist

without motion...not only is motion in time and measured by time but conversely, too, time is measured by motion.<sup>15</sup>

In a sense, time is the articulation of motion, through which it articulates *itself*, without it being reducible to motion (pulling itself up by its own bootstraps, so to speak). Motion, in a broad sense, is both temporalizing and temporalized – articulated through its being projected back on to the temporal horizon through which time can be counted (without being contained). The threefold flux writes that which comes to presence – a tri-horizonal writing that refers to itself through what is written (that which comes to presence) without being present itself. The 'articulating' is not presence, but the temporalizing thrust of *presencing*. In other words, time is always outside itself – though not outside something originally extant. Time is *temporalizing* and, as such, *it is what it is not and is not what it is*. In these terms, is there any way in which it would still be coherent to suggest that that this temporalizing is precisely motion?

Time carries the sense of transition with it, however, movement is understood to happen '*in time*,' which suggests that in order for temporalization to occur there must first be time. As we shall see, it is only within the limits of the common conception of time that we find ourselves in the clutches of an unbreachable circularity. By side-stepping the language which leads to this aporia, we shall see how Heidegger opens up a route to a broader horizon through a phenomenological analysis that spans the differences between time [*Zeit*] (in the mundane or vulgar sense) and temporality [*Zeitlichkeit*]. This road leads us toward the horizon of *Temporalität* (timeliness – an orientation that is understood in the transcendental sense).<sup>16</sup>

From a traditional epistemological viewpoint (which, as Derrida argues, involves an orientation from the point of view of 'presence' – where time is generally treated as being extant), there can be no-thing beyond its own sphere. Any outside unfettered by the limits of a language that is committed to presence (which is still fundamentally metaphysical) cannot be 'known.' This is not to suggest that there might be anything concrete and potentially knowable, by means of some meta-language, beyond experience (veiled by the conceptual spheres in which we comport ourselves), but that time is the 'becoming' of knowing and the known in that, more primordially, in conformity with Kant, it is the 'form' of any possible experience. Alternatively, in saying that there is no knowing of knowing except through the

known (objects articulated / temporalized), would this be to suggest that time is somehow unreal? This would certainly seem to be the case if 'unreal' means that which has never been present and/or that which cannot be brought into presence. If presence were our criterion would this mean that it would make little sense to speak of the *existence* of time?<sup>17</sup>

Time must be presupposed as the horizon in which experience (and the experienced) in general can take place, and it is, in a peculiar sense, for this reason the most real – yet it does not come to presence. It articulates itself through its tenses, which are themselves not actually present, but define the scope of that which does come to presence as tensed objects (objects – understood in the broadest phenomenological sense). The objects undergoing change (or modification of tense) refer back to time as their horizon of *continuous-alteration*, but only in the sense that they are said to be '*in time*' (earlier, now, later). That which can be present must be so through its temporal moments and yet time (that which is the condition of the possibility of presence) cannot, in itself, be present.

If presence were our criterion for the assessment of the actuality status of something (in terms of both 'actual' presence and 'possible' presence) then the unreal must be that which cannot come into presence / be present. However, this is not a suitable criterion when we consider the irreality of an object of imagination. It may not be real, but it is present precisely *as an imagined object*. Of course, we might then be tempted to say that time is nothing more than an object of the imagination. In which case, it would be simultaneously present and unreal. However, although time might be considered as an imagined object that has no actuality outside the imagination, we cannot say the same about the *performance of imagining* itself. It is a *lived-through* experience that already presupposes temporal spannedness. The marvellous irony is that time is the principal criterion for the assessment of the actuality status of every thing except itself. Time – as no-thing – is always already presupposed by any form of presence through which it both announces and conceals itself (consider, as a rough analogue, the invisible play of air currents upon a field of wheat, where the motion of the wheat itself is the only trace of that which stirs it).

Given the traditional metaphysical or epistemological standpoints, which situate themselves within the 'language of presence,' does it then make any sense to speak of the *existence* of time? The most 'real' cannot be real, if presence is our criterion – it can only be 'virtual.'

This virtuality expresses the fundamental character of any horizon in terms of the way in which it simultaneously suppresses / effaces itself (sinks down, steps back) when making something 'stand-forth.' In other words, time *is not* except as an invisible opening and tracing. When abstracted from its moments, which are expressions of both the divergence and interpenetration (unity) of time's three ekstases, it becomes no-thing. Then, how can it be grasped as its own theme? That which expresses temporal eruption – its tenses – are not real-time, neither do they limit time, but nor is time 'real' when deprived of the language of number and motion that would articulate it in the counting.

The 'real' can only be experienced, as such, as that which *abides* as a unity – between its past and its presence to come. Its concreteness is constituted by its 'extension through time' – a spannedness brought about by a synthesis of the three horizons of temporality – the stretching-out of delay / extension that is announced in the differences between past, present and future. Time is constitutive of 'actuality – the 'real' is fundamentally temporal. Time, or more specifically, (in the Heideggerian context) temporality [*Zeitlichkeit*], in this sense, is not 'real,' but is the opening up of the horizon in which the real, presence, or being emerges. Temporality [*Zeitlichkeit*] cannot be 'present,' but (as that which temporalizes itself as the tripartite matrix of the no-longer, now and not-yet) only that which presents. By the same token, 'alteration' itself (as delineated by the language of tense that is significative of the three temporal ekstases – past, present and future) is not present in itself (in an objective sense). The issue of alteration, as in the case of the tenses of time, should be understood in terms of 'forms' or 'modalities' of presencing. That which is present, and which undergoes continuous modification in the manner of its presence (was, is, not-yet, before, presently and after, etc.) through the so-called passage of time, occurs '*in time*' only in that it is articulated through the fold of the three ekstases that provide its scope as something that *endures* in different 'modes,' e.g., some 'thing' in motion or at rest, is, was, or that which is yet to come. The three ekstases, which characterize the dimensionality of time and the scope of all transition in time, are (as already indicated) the horizons of 'interplay' [*Zuspiel*] of the original *extending* of what Heidegger calls 'absolute time,' in which experience in general, movement, presence (which includes identity through change), *continuous-alteration*, and any possible concept of time emerges.

Change, then, presupposes temporal duration and yet change is that which

originally expresses time. For example, spatial changes are experienced as the transitional phases of objects e.g., the movement of objects through space, their growth or erosion through time, etc. Time is not in them, but they are said to be *in* time. Motion, understood as the passage of an object from one location to another, carries the three ekstases past, present and future with it, so to speak, in that an object in motion is brought to one's noticing regard as the 'same object' in transition from a prior location to its present position (what *was* anticipated as a 'futural' possibility) – as opposed to a succession of different spatial objects or points that are devoid of any continuity. We encounter time without seeing it (and we do not see motion 'in-itself'). We perceive 'moving objects.'

Heidegger writes,

When we follow a motion, we encounter time in the process without expressly apprehending it or explicitly intending it. In the concrete experience of motions we keep primarily to the moving thing...<sup>18</sup>

We must at all costs avoid the notion that we experience a number of transitional points as if the 'now' (as one possible temporal index) popped into existence as a discrete entity thereby revealing the object or state of affairs in a series of disjointed transitions from a particular location given in a 'now,' which then ceases to be 'now' through its replacement by a new 'now.' The presence of something identical with itself in transition (which allows us to speak of motion) cannot be that which is simply in the immediate present – thus popping in and out of existence with each successive 'now.' The *what-was* and *not-yet* presence as peculiar kinds of absence and, as Heidegger writes,

What has been does not just vanish from the previous now as does that which is immediately past. Rather, what has been presences, but in its own way. In what has been, presencing is extended."<sup>19</sup>

The present / now itself is a mode of *presencing*, infused within which are its past and futural horizons. The 'now' is not a more primary form of presencing, but the stage upon which the past, the present and the future play themselves out.

## 6. The Extension of the Now

The 'now' or the 'present,' in which presence announces itself *as present*, is indeed a particular kind of punctuation of time. However, it is also a manifold with indefinite fringes. And, its modification as 'not-now,' where that which was present ceases to be present as an immanence, yet persists through its 'shading off' as the retention of that which contributes to the contours of the possible form of the 'present to come' (the latter only being possible through its relation to what was) expresses the horizontal dynamics through which it is extended: the *extending* of the gift of the tenses of time. The Living Present contains this within itself. Here, we have the articulation of succession, the 'temporal *form*' that maintains (*maintenant* – now) itself throughout the oscillation between being and non-being as the fold of their interplay.

In accordance with Derrida's deconstructive reading of Hegel (whose inspiration owes much to Husserl and Heidegger), we must understand that time is not reducible to its moments (being or non-being). It cannot simply be reduced to presence or negated presence. Time is precisely the no-thing, which, in articulating presence as a movement of distancing in a flux of belonging (succession, in Hegelian terms, as a sequence of negations) conceals itself, from the point of view of presence, as absolute negation. It is here that Derrida draws us toward a form of approach to time and its distancing / deferring shifts that does not treat it as a mere swing from being to non-being. Neither is it treated as the simple negation of presence (a mere diametrical opposition). Difference is irreducible to simple opposition. And, this is also true of deferral in relation to the issues of presence and the present. Time defers, holding itself beyond any 'determinate' negation. It is resistant to a reduction to a merely negative position (as non-being) in the dialectic of succession. Time becomes a question of 'tracing,' a temporal writing in whose fold the poles of positivity (presence, the 'now') and negation (the 'was' or the 'not-yet') first come into play.

All the same, in the case of Hegel are we not still left with 'discrete' moments strung together within a linear continuum of determinate negations? Is this model merely a reformulation of a naive conceptualization of diachrony, which still suggests a fundamentally atomistic framework, in the sense that it postulates 'actual' divisions between temporal points (moments / nows) as if each one was as distinct as a

Leibnizian monad or as discrete as a Humean impression? Do we still essentially speak of independent entities – the demarcation between 'nows' being established through their continual disintegration into non-being? If so, from an experiential point of view we are then left with the problem of how these individual existents are actually strung together.

In fact, both Hegel and Derrida subject the problem to very rigorous forms of critique and thus avoid this specific objection, but their own modes of discourse are seriously incomplete. Their particular emphasis on the themes of difference / deferral and nothing / negation (absolute, determinate and sublative) tends to obscure a vital factor that must be taken into account. In the absence of the language of temporal convergence or intertwining [*Ineinander* / *chiasm*]<sup>20</sup> extending beyond an instant (instance of difference), we are left without any form of 'relation-through-succession' through which time (duration) can be registered or 'counted' – a process which, itself, has duration. Intertwining is that which *gives* difference. The nothing speaks of the spacing between – which is not literally nothing, but the non-present connective tissue through which objects / moments stand-outside-themselves in *relations* of differentiation. The nothing is none other than the horizon that recedes before that which comes to presence (that which has always already preceded presence). It is not only the *tracing* out of the contours of presence; it is the chiasmic thread that invisibly binds different modes of presence while holding them apart.

Consider this working note from Merleau-Ponty's *Visible and the Invisible*, which precedes (or anticipates) Heidegger's notion of the fourth dimension of time as the essential *interplay* of "time's three dimensions" (the lecture of the title "Time and Being" was first presented by Heidegger on January 31st., 1962).

Time and Chiasm  
November, 1960

The *Stiftung* [founding / establishment] of a point of time can be transmitted to the others without "continuity" without "conservation," without fictitious "support" in the psyche the moment that one understands time as chiasm. Then past and present are *Ineinander*, each enveloping-enveloped – and that itself is the flesh.<sup>20</sup>

What Merleau-Ponty says about the intertwining between past and present in the concept of chiasm (the flesh) is also true of their interpenetration with the future. It is interesting to speculate where he might have taken this line of thinking in relation

to his discourse on 'vertical' analysis had he lived to finish *The Visible and the Invisible*.

Should we not ask, by referring back to our previous discussion, how the experience of any discrete moment, entity (or series) is possible?<sup>21</sup> Wherein lies the continuity? Rather than first beginning with a moment which then drifts into non-being by means of its replacement by a new moment through a dialectical shift must we not ask how identity, themes and states of affairs emerge and find themselves *sustained*? If they are the 'articulated,' which, although they are unable to contain time, are given by means of the 'moments' of punctuation (temporal modalities / tenses) that express time (and give us the matter of theoretical time), it is clear that we must attend to the '*relations* of difference' that provide the sense of a determinate identity as an emergent and extended (enduring) pole in its '*relation* to that which it is not' (i.e., the past and the future through which it endures [stretches-out] as the same, but non-identical). The 'now' is not an entity or presence, but is an 'opening' through which things stand out as both retained and anticipated forms of presence.

If, in consonance with the phenomenological and deconstructive orientations on temporality, we deflect our attention from concrete moments / entities simply strung together to a temporal play of 'signification' (which is *one* of Husserl's orientations in his lectures on time consciousness<sup>22</sup>) then we can begin to focus on a more syntactical horizon through which moments (temporal modalities) find their form; a relational *flux* or *tracing*, which, in articulating itself through that which comes to presence, announces the primordial 'interplay' of these moments. As modalities of presencing, these moments, in principle, are logically distinct from one another within an order of successions, but not as *discrete* entities in 'actuality' since they *retain* what is no-longer while reaching toward the not-yet. In other words, they are stretched-out. Furthermore, as expressions of the 'ways' in which things come to presence, they are logically distinct from the flux through which they converge with one another, but, once again, they are not distinct in actuality, since their articulation and essential interpenetration is nothing but the *speaking-out* of this archi-tracing or absolute flux. The present or the 'now' erupts through a temporalizing flux that is not a mere aggregate of its moments, but is the horizon of their interplay – the *articulating* of these moments. This is precisely why Heidegger, when speaking of the fourth dimension of absolute time, is not making an 'addition' to the three ekstases, but is attempting to express only the fundamental..."interplay of each towards each...the

giving that determines all."<sup>23</sup>

The 'now' emerges as a synthesis of a twofold negation (but not in the sense of negated Being) and expresses the interplay and divergencies of the three temporal horizons of past, present and future – since retention and protention originally mark out the fringes of the 'bulb' of the Living Present. The present is not a mere point that lacks extension, but is an open-ended 'stretch' between its 'no-longer' and its 'not-yet.'<sup>24</sup> As we have seen, this is not to shift to the model of the 'now' as a line between two points, for here we speak of unbounded betweenness – pure stretch. The 'now' carries its own negation with it precisely because the form of the present is one of outpouring: an overflowing of itself. At the core of the 'now' is a temporalizing synthesis of spacing. It is the site of unity and alterity.

Heidegger writes,

In the now...there is already present a reference to the no-longer and the not-yet. It has dimension within itself; it stretches out toward a not-yet and a no-longer. The not-yet and no-longer are not patched on to the now as foreign but belong to its very content.<sup>25</sup>

As suggested above, Derrida's approach to time (via his reading of Aristotle and Hegel) cuts through its reduction to a mere temporal oscillation between being and non-being. The reason for this, quite apart from the obvious inspiration by Heidegger, is that his notion of 'trace structure' is built upon Husserl's theories on time-consciousness in which the tracing *of* simultaneity and succession is understood as a longitudinal and transversal play of retentional and protentional temporal *signification*.<sup>26</sup> Here, we find an explicit rejection of the view of time as a continuum made up of discrete or atomic 'nows' and thus a denial of the sense of 'concreteness' generally attributed to each present – an archaic notion which tends to suggest that the 'now' flashes in and out of existence thereby making up a series of discrete pieces of time (in which case, once again, we would need to speak of *times* rather than time) that are inexplicably bound together. One is reminded, here, of the flickering of silent celluloid worlds (by courtesy of the Hollywood of the twenties) playing upon whitewashed walls of old film theatres. The flickering announces the gaps between frames. Increase the speed at which the film is projected and the flickering becomes less apparent, while the world opened upon through this medium displays itself at a consistent though dizzying temporal rate. But, what is it that binds the sequence of

frames into a continuous movement? – one world in motion rather than a plurality of discrete moments or existents? The rate at which the frames flash from one to the other is an obvious consideration, but it is not an answer to the question about how these atomic moments are synthesised into a thematic continuity, a unitary continuum.

If each frame was a 'now,' its self-presentation would need to be such that it contained within itself its 'before' as a horizon which opened upon its 'later' – projecting the scope of 'what is to come' by sustaining forms / themes: allowing them to *abide* through the altered phases. Clearly, individual frames, atomic moments, discrete points, etc., have no such trans-dimensionality in themselves and the rate at which the film travels through the projection gate cannot account for the necessary temporal synthesis of the three ekstases of time, which must be presupposed as the condition by which such moments are to be experienced – not as a disjointed or jumpy transition of individual frames (or points), but as a flowing unity in motion.

The audience itself fills in the gaps through the intentional interplay of both retention and protention – which means that the old concept of *persistence of vision* is insufficient as *the* explanation for such a continuum because it is purely backward-looking in its emphasis on the *retained* imprints of previous images. Every consciousness also carries temporality with it in the form of its *anticipatory* thrust into the not-yet as well as its retention of the no-longer – which, at the level of passive synthesis or internal time consciousness (in Husserlian phenomenology) go to make up the contours of the *streaming* Living Present. This is a kind of double edged 'folding backward and forward' – where the retentions do indeed provide the scope for the form of expectation, but it is the *protentional* ray of the intentional flux that unfolds the futural horizon of possible fulfillment, degrees of fulfillment, or non-fulfillment in which the retained find their continuity or discontinuity: an 'unfolding' that 'anticipates that which is not-yet.' Thus, each new frame that passes over into the next expresses a continuity of movement, sense and identity since its *registration as such* is the fulfillment of a prior expectation.

Temporality (*Zeitlichkeit*), conceived phenomenologically, is constitutive of all possible experience in that it is the 'open horizon' in which things persist through successive changes (temporal modification) – a threefold, through which themes presented in a moving film composed of equi-distantly spaced discrete moments (frames) can abide as an unbroken and thematic flux of unified movement. At the experiential level, in Husserlian terms, the threefold is given through retention, primal

impression and protention – whose correlates in the early language of Heidegger are retaining, enpresentation and expecting.<sup>27</sup>

The transcendental sense of *Temporalität*, as expressed by Heidegger, is that standpoint which permits one to focus on the 'interdependency' of the three ekstases – an interplay which Husserl calls Primordial Flux. For Heidegger, there is a *giving* that is constitutive of the horizon of *Zeitlichkeit* in which things abide in a 'present' which, by being already outside itself (spanned), provides flowing continuity. The 'now' is founded through a flux (and in a peculiar sense the contemporaneity) of the three horizons of Temporality. The 'giving' of each to each in their communality of differentiation provides, as indicated above, the opening and structurality for any possible experience of change / alteration. However, once again, these horizons are not 'real' in the sense that they are present or capable of presence – they are structuralizing modalities of presencing. They provide the 'now' with its dimensionality (or as Heidegger says, its 'stretch') – articulating transitional differentiation within the 'now' through its own intrinsic relation to the 'what was' and 'that which is to come.'

Heidegger writes,

Because of this *dimensional content* the *now* has within itself the character of a transition. The now as such is already in transit. It is not one point alongside another point so that some mediation would be needed for the two. It is intrinsically transition. Because it has this peculiar stretching out within itself, we can conceive of the stretch as being greater or less.

The scope of the dimension of a now varies; now in this hour, now in this second. This diversity of scope of dimension is possible only because the now is intrinsically dimensional.<sup>28</sup>

It is here that we find ourselves at a point of return. The phenomenological component of our deconstruction of the tale of "Achilles and the tortoise" has been geared toward showing that the value of Zeno's paradox obviously does not lie in any actual success as a refutation of the reality of motion and change in general – as a mere defense of the Parmenidean Plenum – but resides in its expression of the limits at which the 'common (objective) conceptions' of time, space and motion begin to break down. Obviously, we do not find ourselves forced to deny the reality of motion or the 'now,' but are moved to reorient ourselves in regard to the question of what we *mean* by their particular 'kinds' of reality. We discover that this demands a careful re-examination of the traditional systems whose hierarchical structures give primacy to

the present and presence. As such, these Eleatic logical moves, as suggested in the beginning, can be read as outlines of a kind of embryonic or proto-deconstructive exercise in their own right.

According to Zeno's manner of attending to questions about the reality or unreality of motion and change, and our utilization of this logic as a means of radically bringing into question any notions of space and time in which they are conceived as made up of discrete points or moments, we are led to the thought of motion, the 'now,' and presence in general, as being fundamentally expressive of spannedness / dimensionality. When measuring the changing distances in our revised (temporally oriented) narrative form of the paradox of Achilles and the tortoise, we find that Zeno's description of the infinite divisibility of time and space shows how any now is never extensionless. It always has (always had and will have) breadth. Both the flow and limit of motion is articulated through the 'now' because the latter retains what-was in its ekstastic opening upon what-is-to-come. And, it is this protentional element of the present or 'now' as a *waiting-toward* the not-yet that expresses its macroscopic sense, which is in advance of Zeno's logic of the inexhaustibility of the microscopic field of infinite divisibility. This is what is meant by the term Living Present (*lebendige Gegenwart*). As such, motion is expressed by, and expressive of, the 'dimensionality' of the 'now.' In turn, the *spannedness* of the 'now' (the Living Present) is expressive of the threefold ekstastic play (inter- and intra-play – interpenetration) that provides the extension within its very heart as it stretches beyond itself. Time articulates itself in the 'now.'

By recounting a certain structure of inexhaustible spannedness that should, by now, be familiar to the reader, Heidegger claims (in singularly Eleatic terms) that...

Every now and every time-determination is *spanned* within itself, has a range that varies and does not first grow by means of a summation of individual nows as dimensionless points. The now does not acquire breadth and range by my collecting together a number of nows, but just the reverse: each now has this spannedness within itself in a primary way. Even if I were to reduce the now to a millionth of a second it would still have breadth, because it already has it by its very nature and neither gains it by a summation nor loses it by diminution. The now and every time-determination has a spannedness intrinsically. And this, too, has its basis in the fact that the now is nothing but the 'expression', the 'speaking out' of original temporality itself in its ekstastic character.<sup>29</sup>

It is the question of the extension / extending of presence that must of itself

fold back upon the horizon through which presence is *articulated* – that which provides the *space* in which things come to present themselves as self-identical throughout any alteration in their mode of presencing, e.g., in motion or at rest, now, no-longer and not-yet, etc. Thus, we must consider, in equal terms, two 'apparently' distinct meanings of *spacing* that trace themselves out in the sense of 'extension.' Not only does it express distanciation, diachrony, etc., as that which *makes room*, but also a certain kind of linking or recovery. In other words, it is to cover a distance (or better, a breach) through a kind of 'giving' – an extending in the sense of approach or to reach out: to 'extend a gift.' This extending or chiasm of temporal-spacing, in the giving of time to itself through the inter- intra-play of its three ekstases, is the original *giving* of presence in all its possible modes.<sup>30</sup>

If we further consider that aspect of extension that suggests a certain kind of delay or postponement, as in the sense in which one might extend the date of the completion of a task (which we can find in the Greek word *ekteeno*: stretch, extend, *prolong*), the complicity shared by temporalizing and spacing makes itself felt with even more force. Accordingly, the *sense* of 'spacing' and 'extension' that we wish to bring out here (like Derrida's quasi-transcendental concept of *différance*, as both differing and deferring) is neither reducible to the site of space nor that of time – certainly not when these expressions are understood according to their traditional and discrete determinations. They are rather to be understood in terms of *organizations of space and time*, which are two faces of the same coin. Thus, we speak of the pure surpassing and recovery of their essential intertwining.

To conclude, a brief group-dedication is called for with regard to the style of our particular appropriation of the logics at play in Zeno's paradox. Jorge-Luis Borgès' admirable essay, "The Avatars of the Tortoise" was the principal inspiration with respect to the 'scope' of this article. The inestimable value of both Husserl's work and that of Heidegger is clearly apparent since they provided the language and method for the preceding investigations. This also applies to Merleau-Ponty, whose concept of *chiasm* (intertwining) complements Heidegger's notion of the fourth dimension of time as the pure *interplay* of its three *ekstases*. However, it is Derrida's style that has, perhaps, played the most significant role in terms of the development of the 'strategy' of these analyses, especially in relation to the metaphysics of the present and presence.

In the essay "Ousia and Grammé," Derrida, by means of his deconstructive

readings of Aristotle and Hegel, succeeds in capturing the phenomenological treatment of the theme of temporality in terms of 'temporizing,' 'spacing,' 'tracing,' 'writing,' 'extending,' as well as the 'always already,' etc., and thus opens up a space for a discussion on non-linear and pluri-dimensional forms of temporality. Ultimately, his playful style of re-reading shows us how to avoid drowning endlessly in the kind of aporia that arises through a metaphysics of presence which, in its understanding of existence or presence as that which is given within a discrete 'present' (as opposed to existence as a *presencing*, a temporal 'articulating' / 'spacing'), would otherwise cause us, within the limits of a 'traditional reading' of Zeno's work, to flounder once again in an Eleatic sea of paradox.

## Epilogue

It is also the case that Derrida gives us reason to feel perplexed in a manner that repeats the asymptotic play of non-completion that we first encountered with Zeno. His deconstructive critique of the teleological / eschatological – and thus, foundational – aim of the logic of presence demonstrates, in many different dimensions, how this language bears the traces of the impossibility of its own fulfillment – a task that cannot be completed, only exhausted.

In the light of this critique – where closure does not equal completion or totality – deconstruction as a style of *re-writing* often bears itself like a form of philosophical wandering, since its utopic (non-positional) and non-centred critique of the language of 'presence' is not initiated on the basis of some kind of ideal speculation, i.e., that there is an alternative (or even a 'master') logic / language subsisting 'beyond' the metaphysics of presence. Such critical discourse is always necessarily infused with that which it subjects to deconstruction – to lose is to win and to win is to lose. The irony lies in the impossibility of deconstruction stepping beyond that which yields to deconstruction – which includes itself. There is no finishing post for such a critique, only an eternity of delay. However, deconstruction signs the moment at which the awareness of delay no longer expresses itself as waiting – in the

sense of waiting *for something*.

We cannot avoid banging our heads and stubbing our toes against the limits of language – i.e., the ontotheological horizon in which the Achilles' heel of language is precisely its own inability to surpass the logic of presence, which originally conditions it. We can only run up against *différance*. Like the tortoise's perpetual withdrawal, the transgression of the limits of the metaphysics of presence remains out of reach. The moment of fulfillment remains perpetually deferred.<sup>31</sup>

## NOTES

1. Henri Bergson. *La pensée et le mouvant* (1946). Cited in Jacques Derrida's essay "Ousia and Grammé: a note on a note from *Being and Time*." Printed in *Margins of Philosophy*. Henceforth referred to as *MP*, p.58. [footnote]. See bibliography.

2. For details on the pivotal relation between the 'now' (*maintenant*) and 'maintenance' in Derrida's writing, see "Ousia and Grammé: a note on a note from *Being and Time*," *MP*, p.32. [4th footnote].

3. See p.14 of Martin Heidegger's essay "Time and Being" in *On Time and Being*. Henceforth referred to as *OTB*.

Time-space...is the name for the openness which opens up in the mutual self-extending of futural approach, past and present. This openness exclusively and primarily provides the space in which space as we usually know it can unfold. The self-extending, the opening up, of future, past and present is itself prespatial; only thus can it make room, that is, provide space.

The sense of *extending* here, as a 'prespatial' opening which *makes room* for space, can be traced back to 1927 and Heidegger's account of the meaning of extension and continuity (in terms of their relation to motion) in Aristotle's *Physics*. Once again, extension is irreducible to mere spatiality (as delineated in the quotation below).

Extension and continuity are already implicit in motion. They are earlier than motion in the sense of being a priori conditions of motion itself...Extension here has a broader sense than specifically spatial dimension. Motion follows continuity, and continuity follows extendedness (*The Basic Problems of Phenomenology*, p.243). See also note 14 below.

4. Lawrence Sklar. *Philosophy and Spacetime Physics*. p.302.

5. A rigorous treatment of the notion of tenseless time can be found in D.M. Mellor's *Real Time*. See bibliography.

6. Aristotle writes...

it is false to claim that the one ahead is not caught: it is not caught while it is ahead, but nonetheless it is caught (provided you grant that they can cover a finite distance). *Physics*. 239b5 240a18.

It should be noted that Aristotle's principle of non-contradiction (the law of

the excluded middle) tends to lead to a myopic reading of Parmenides's arguments, as well as those of Zeno. Unfortunately, these arguments had already fallen victim to rather simple-minded readings by the Sophists. The profundity of Parmenidean and Zenoistic thought has undergone obfuscation throughout the history of Western philosophy. One may even suggest that Zeno's 'paradoxes' anticipate the non-Euclidean geometry of four-dimensional Riemannian space – whose usefulness could not be conceived within the prevailing world-view in which space and time were considered to be discrete and Absolute. The reign of Euclidean geometry, and Aristotelian geo-centrism (with its notion of the circular movement of the sun and the planets around the Earth), could do nothing other than result in the treatment of Zeno's formulations as 'paradoxes.'

7. In a way, this is precisely what Einsteinian relativistic physics does. This is only possible because of the shift from one measure of constancy to another. Einstein does away with Absolute time and substitutes this measure by the finite velocity of light as it propagates through a vacuum.

8. The equality of two time intervals (or distances covered in time) is relative to whichever clock is chosen to 'define' regular duration. This provides the 'constant': it enables us to measure any changes that occur spatially in relation to a regulated system defining temporal duration. Motion is the product of the 'combination' of the spatial and the temporal.

9. We do not need the further complication of 'acceleration' since this is a higher order (secondary) phenomenon that is ultimately rooted in motion in general: speed / velocity as distance over time. As acceleration is a second derivative of time and distance (the first derivative being velocity) we shall not incorporate it in this analysis since the issue of acceleration would merely overcomplicate a relatively straightforward argument that is in no way dependent upon it.

10. In other words, at five seconds into the race the two competitors are both twelve and a half paces distant from Achilles' starting point.

11. Derrida. "Ousia and Grammé: a note on a note from *Being and Time*," *MP*, p.43.

12. It should be mentioned that Derrida maintains that all discourse on time is inherently metaphysical, rooted in a constellation of concepts ruled by the thought of presence (*Anwesenheit, parousia*) and the present (*Gegenwart*) through which Being (*ousia*) is formally determined. See in particular Derrida's essay "Ousia and Grammé: a note on a note from *Being and Time*," (*MP*), which is inspired by Heidegger's announcement of a specific agenda in a second half to his magnum opus, which never appeared in that form. However, many of the projected analyses were actually brought into play in a lecture course of – surprise, surprise – 1927. However, the lectures were not published until 1975 as *Die Gründprobleme der Phänomenologie*, some years after Derrida had produced "Ousia and Grammé." One of the most fascinating aspects of the latter's essay is that in it *speculates* upon analyses that Heidegger did, in fact, undertake himself, but about which Derrida was probably unaware (at least until *after* he had already produced his own 'note on Heidegger's note'). Derrida develops the projected themes in a number of different directions to Heidegger's analyses. Side by

side, the two texts present a remarkable opportunity to compare Derrida's deconstructive phenomenology with that of Heideggerian phenomenological de-construction. See also Derrida's essay, "Différance," and the text, *Speech and Phenomena*.

13. Heidegger. *The Basic Problems of Phenomenology*. p.266. Henceforth referred to as *BPP*.

14. Heidegger. "Time and Being," p.15 (of the lecture as published in *OTB*). Compare this with Merleau-Ponty's discussion on the unity of time which he expresses as *chiasm* (see note 20 below).

15. Heidegger. *BPP*, pp.235-36.

16. Heidegger writes,

What has to be shown is this: temporality is the condition of the possibility of all understanding of being; *being is understood and conceptually apprehended by means of time*. When temporality functions as such a condition we call it Temporality [*Temporalität*]. *BPP*, p.274.

I have adopted Albert Hofstadter's practice of translating *Temporalität* as Temporality (with a capital T) and *Zeitlichkeit* as temporality. When either of these begins a sentence their German form will follow in brackets.

17. Time is given through motion (change) but the latter is only articulated through the passage of time. We might playfully suggest that it is on the question of the reality of that which cannot be made present: time – or more specifically, the horizon of 'temporal articulation' – that the Parmenidean Plenum and the Heraclitean Flux converge. Time is the most real in that it articulates reality / presence – but it is not present. And, Time cannot be said to change since it is nothing more than the eternal return of the same (the One).

Here the 'same' does not mean a determinate and unchanging content, but the 'perpetual repetition of flux.' Time *is* only in that it *speaks / articulates* (temporalizes / spaces) presence and change – thus indicating itself *in the speaking*.

18. *BPP*, p.244. Heidegger further writes...

...time...is not itself...the motion of the moving thing but still it is *not without* motion. From this it follows that time is connected in some sense with motion; it is not kinesis but kineseos ti, *something at, close to, motion*, something in connection with the motion of the moving thing (*Ibid*, p.235).

In sum, according to Heidegger's reading of Aristotle's discourse on time, Time does not itself belong to motion, but *embraces* it (*Ibid*, p.252).

19. Heidegger. "Time and Being," *OTB*, p.13.

20. See pp.267-68 of Maurice Merleau-Ponty's last (and unfinished) manuscript, *The Visible and the Invisible* (translation modified). See bibliography.

21. In this respect, Edmund Husserl's lectures on time consciousness (*PCIT*) is a response to certain problems (in regard to the question of the unity of experience, and thus history) that David Hume found to be insurmountable within the parameters of, what was essentially, the language of empirical phenomenalism. I am of course referring to Hume's extraordinary investigation "Of personal identity" in his *Treatise of Human Nature*. His problem was twofold in that he considered...

*...that all our distinct perceptions are distinct existences, and that the mind never perceives any real connexion among distinct existences. Did our perceptions either inhere in something simple and individual, or did the mind perceive some real connexion among them, there would be no difficulty in the case. For my part, I must plead the privilege of a sceptic, and confess that this difficulty is too hard for my understanding. I pretend not, however, to pronounce it absolutely insuperable. Others, perhaps, or myself, upon more mature reflection, may discover some hypothesis that will reconcile those contradictions (Appendix, p.636).*

Since there is no simple impression of Self that is "constant and invariable" (p.251), Hume is led to conclude (with some dissatisfaction – as is evidenced by his remarks in the appendix) that the mind is "nothing but a bundle or collection of different perceptions, which succeed each other with an inconceivable rapidity, and are in a perpetual flux and movement" (p.252). However, this leads to the problem of how continuity can be taken into account in a model of the psyche that restricts it to a successive flux of atomic or corpuscular moments: "distinct existences."

Hume writes,

*...all my hopes vanish, when I come to explain the principles, that unite our successive perceptions in our thought or consciousness. I cannot discover any theory, which gives me satisfaction on this head (Appendix, p.635).*

But surely, we must argue, such an impressional consciousness must carry within itself a consciousness *of* sameness and difference, which speaks of a 'stretched' and 'intertwined' consciousness, whose inherent unity does not come from the empirical units (impressions) which flash before the Humean introspective gaze. How can we speak of a *bundle* of impressions without an already 'extended' *consciousness of* such a plurality? Such a source of unity is not to be found in a purely objective field, but only in the *tracing* of a horizontal opening – and the structure of the extending-toward of consciousness in its historical self-relation and projection – through which there can be such a thing as a meaningful impression or appearance. It is Hume's objectification of consciousness that obfuscates the important phenomenological difference between the experiencing and the experienced. The former also involves a flux, but of a different kind. Whereas the experienced (objects of experience) are always changing, the experiencing only undergoes alteration with respect to its many possible *modes*. The experiencing is continuous throughout – which is precisely why there is consciousness *of* alteration. Hume of course did not have access to an *intentional* theory of perception. Franz Brentano and Edmund Husserl developed this discourse.

Husserl writes,

It is intentionality which characterises *consciousness* in the pregnant sense of the term, and justifies us in describing the whole stream of experience as at once a stream of consciousness and unity of *one* consciousness (*Ideas I*, Sec.84, p.222).

In Husserl's phenomenology it is important to remember that the question concerning the *unity* of the consciousness *of* time – as an extended / extending consciousness *through* time – is not restricted to (understood on the basis of) a mere expression of Self or personal identity, as it seems to be for Hume. The unity of which Husserl speaks indicates something earlier: temporalized / temporalizing consciousness – the *a priori* condition of possibility of the constitution of what we would normally call the Self – a retentional / protentional continuity of a *pro-ject*.

22. See Sec.6, p.19, of Husserl's *On the Phenomenology of the Consciousness of Internal Time* where he asks a question that could be said to be the cornerstone of the contemporary debate between deconstruction and phenomenology on the issue of presentation versus *re*-presentation.

Husserl writes

Where do we get the idea of the past? The being-present of an A in consciousness through the annexation of a new moment, even if we call that new moment the moment of the past, is incapable of explaining the transcending consciousness: A is past. It is not able to furnish the slightest representation of the fact that what I now have in consciousness as A with its new character is identical with something that is not in consciousness now but that did exist. – What, then, are the moments of original association that are now being experienced? Are they perhaps times themselves? In that case, we confront the contradiction: all of these moments are there now, enclosed within the same consciousness of an object; they are therefore simultaneous. And yet the succession of time excludes simultaneity. Are these moments perhaps not the temporal moments themselves but temporal signs instead?

23. Heidegger. "Time and Being," *OTB*, p.15.

24. Merleau-Ponty speaks of the Living-Present as a *bulb of time* that has indefinite fringes extending into the past and future. This is probably the most fruitful way in which to explicate the interplay of retention, primal impression and protention as it is thought in Husserl's studies on time-consciousness. However, many critics (perhaps even Merleau-Ponty himself) have made the mistake of assuming that Husserl worked with the notion of an 'atomic' temporal sequence in which *primal impression* alone is the Lived-Present: where the retentions and protentions, which serve to mark out the boundaries of the Living-Present, are thought to be on both sides of the 'moment' of *primal impression* – not as essentially intertwined horizons within itself, but as 'representational' supports that are essentially outside, although dependent upon it. This is a completely inadequate reading. Husserl's lectures on time consciousness show that this tripartite matrix of retention, primal impression and protention is precisely the structure of the Living-Present – whose open-endedness on both sides expresses the fringes that mark out the contours of the 'bulb of the Present' from within itself.

25. Heidegger. *BPP*, p.248.

26. This is contrary to the popular reading of the thrust of Derrida's *Speech and Phenomena*, which 'appears' to polemicize against Husserl's discourse on time, presence and signs. However, it can be argued with some force that a careful examination of the development of Derrida's quasi-concept *différance* shows that its theoretical roots lie in the tracing of the retentional and protentional interplay as expressed in Husserl's concept of Primordial Flux.

27. In *Speech and Phenomena*, Derrida discounts the essential function of *primal impression*, by reducing it to its purely noematic sense: an objective sense (appearance) that always already presupposes the performance of the retentional and protentional dialectic which traces out time-consciousness. However, *primal impression* is irreducible to something like a pure Humean impression. It is rather the boundary of negotiation between retention and protention.

In contradistinction to Derrida's reading of the primary dynamics of time-consciousness, *primal impression* is not merely a 'noematic' (objective) configuration founded by an essentially 'noetic' retentional / protentional dialectic. *Primal impression* must be understood in terms of the Husserlian notion of *evidence*; it is a certain *mode* of intentional consciousness: *consciousness of* something as a 'now-consciousness' in contrast to the modes of consciousness that give the no-longer or the not-yet. The latter are also present modes of consciousness, but they are not consciousnesses *of* the present. Contrast is given because primal impression is one particular mode of lived-experience in a relation of intentional encroachment with other modes of intentionality that, together, permit differences to stand-out and thus *give* duration. This tri-horizonal play of interpenetration at the very heart of any possible experience is the structurality of any possible opening of perception – actual or phantasiable. Primal impression is the fulfillment of what *was* a protention. The Living Present is a waiting-towards an open extension of what will have been given through primary impression.

Derrida's model, however, would not allow any distinction between phantasy and actuality precisely because he does away with the question of *primal impression* by converting the flux, in form, to a mere 'dyadic' interplay between retentions and protentions. However, the idea of primal impression brings with it the all-important phenomenological concept concerning the play between fulfillment, non-fulfillment and *degrees* of fulfillment. Primal impression is the present actualization of what *was* futural. Here, we speak of a structure of negotiation that originally permits us to distinguish between phantasy and the real. Without the functioning of primal impression, we would be reduced to pure hallucination – unable to differentiate between fact and fiction. Furthermore, we would not be able to speak of surprise. Thus, *primal impression* acts as a kind of 'cut,' a breach in the flux of retentional and protentional moments which extend the past toward the future and the manner in which the future realizes itself in passing over into the past.

At a higher level, an example of this would be when one might notice a familiar face in a crowd only to find, upon approaching the person according to such a 'specific mode of expectation,' that one was, in fact, mistaken. Consciousness of one's error (the mistakenness of one's original identification) presupposes a certain 'evidence' of a state of affairs that is, in fact, contrary to that posited by expectation. Actuality rushes in to transform the shape of the projection into mere illusion.

In other words, what signs itself here is the moment at which a determinate

expectation, whose material is delivered up from the past (through memory), is forced to undergo adjustment on the basis of a consciousness (primal impression) of something – that is present – with which the expectation does not correspond. As the protention passes over into retention the content of expectation is annulled and retained only as unfulfilled and mistaken. Primal impression marks (to speak metaphorically) the 'point' at which expectations are fulfilled or otherwise. It is the spacing through which existence pours in, disrupting imagination and ideality.

Therefore, it is important to understand that the term primal impression (or now-consciousness) is not synonymous with the Living Present (*lebendige Gegenwart*). It refers to only one present form of 'orientation' that articulates the way in which retention and protention (as present modes of orientation *of* that which is no-longer and that which is not-yet) pass over into one another in the constitution of the ever-flowing present. The Living Present itself is a tri-horizonal 'field' – not a 'point.'

28. Heidegger. *BPP*, p.248-49.

29. Heidegger. *Ibid*, p.269-70.

30. In "Time and Being," Heidegger notes...

...that absence too, manifests itself as a mode of presence. What has-been which, by refusing the present, lets that be present which is no longer present; and the coming toward us of what is to come which, by withholding the present, lets that be present which is not yet present – both made manifest the manner of an extending opening up which gives all presencing into the open (*OTB*, p.17).

31. Such is the structural dynamic of delay that has come to be known as the "Quantum Zeno Effect." Yet another example of what is essentially an inexhaustible play of different manifestations or avatars of Zeno's famous and enduring formulations.

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