Abstract
This paper has a twofold objective. The first part engages with the interrelation of time, space, and matter in Kant, Heidegger, and Derrida and questions whether and how this interrelation effects the possibility of self-relation. In Kant and the Problem of Metaphysics Heidegger suggests that the very structure of subjectivity is constituted by what he calls the ‘pure self-affection’ of time. For Heidegger the possibility of a self to become affected by itself, and thus the possibility of self-relation as such, is therefore intimately bound up with the temporalizing of time. In his 1964–65 seminar, Heidegger: the Question of Being and History, Derrida translates this pure affection of time into the more generic term ‘auto-affection,’ which will remain a pivotal reference point for his deconstruction of the metaphysical privileging of time as presence. In several places, Derrida shows how the (im)possibility of auto-affection is bound up not only with time but also with space, or rather with the ‘spacing of time’ that he also refers to as ‘the trace.’ The second part of the paper attempts to move across the frontier of philosophy and physics in the effort to pose anew the question concerning the interrelations of temporality, spatiality, and materiality. With reference to what in general relativity is called ‘the curvature of spacetime,’ which according to Einstein is a manifestation of the gravitational pull of matter and energy distributed across the observable universe, the efficacy of materiality in the movement of auto-affection is thus called into question.

Keywords: Temporality, Spatiality, Materiality, Transcendental Aesthetics, Deconstruction, General Relativity.
1. The Pure Auto-affection of Time
What initially puts Heidegger on the trail of the movement of auto-affection in section 34 of his *Kantbuch* is what he calls an ‘obscure assertion’ that Kant makes in paragraph B 102 of the first *Critique* when talking about the conditions of possibility for the synthesis of understanding. In contrast to what Kant says earlier in the transcendental aesthetics, where time and space are conceived of as the pure forms of sensuous intuition making out the conditions of receptivity under which the mind can receive representations (*Vorstellungen*) of objects, Kant now adds that space and time themselves ‘must always also affect the concept of the representation of these objects’ (Kant 1956, B 102). In other words, time and space are no longer the inertial and passive frames of reference; rather, they actively affect whatever may come to be referenced within these frames.

In his further interpretation of this ‘obscure assertion,’ however, Heidegger immediately omits space from the equation and proceeds to question only the affection of time. Heidegger is perhaps justified in doing so, since Kant himself describes space as the form of intuition pertaining to the representation of external objects, whereas time is the more comprehensive form of intuition pertaining to the representation of both external and internal objects. Accordingly, only time is seen as having an effect on the inner intuition of the subject. Nonetheless, we shall see with Derrida that this exclusion of space from time may be problematic with regard to Heidegger’s own attempt at destroying the ‘vulgar’ conception of time as presence.

Coming back to the *Kantbuch*, the first thing that Heidegger clarifies with regard to Kant’s obscurity is that ‘the concept of the representation of objects’ alludes to what characterizes representation *as such*, namely, *Vor-stellung* understood as the very ‘letting-stand-before-or-against-of … (*das Gegenstehenlassen von …)*’ (Heidegger 1991, 189) some thing, which therefore also connotes the delimitation and finitude of the representing subject. Yet, Heidegger asks, what does it mean that time as the form of inner intuition affects us? This is a strange assertion, Heidegger emphasizes, because according to Kant all affection stems from the ‘self-announcing’ (*Sich-melden*) of a being that appears to a subject as ‘being already at hand’ (*vorhandenden Seienden*), that is, a being that does not originate from the subject itself. Time, however, is neither a being at hand nor it is something ‘external’ (*draussen*) to the subject; in fact, as Kant says, time is ‘nothing at all if one abstracts from the subjective conditions of sensible intuition’ (Kant 1956, A 36). How can it be, then, that this ‘nothing’ of time may be said to affect the subject of intuition in its very standing-over-against something? Heidegger’s ‘solution’ to this problem, or rather his illumination of Kant’s obscurity, is that time, *as no-thing at all*, affects *nothing but itself*, and that this is, in fact, the very
definition of time, in that ‘time is essentially the pure affection of itself’ (Heidegger 1991, 189). However, this also means that time does not affect the subject as something else than or as separated from time. Rather, Heidegger explains:

As pure self-affection (reine Selbstaffektion), time is not an efficacious affection (wirkende Affektion) that strikes a self that is at hand. Instead, as pure, it forms the essence of something like self-activation (Sich-selbst-angehen). However, if it belongs to the essence of the finite subject to be able to be activated as a self, then time as pure self-affection forms the essential structure of subjectivity. (Heidegger 1991, 189)

In short, it is the very bending or folding back of time upon itself that forms the coming into being (or the Wesen) of a being that can relate to itself and concern (angehen) itself with itself. The temporality of time ‘constitutes’ or ‘forms’ (bildet) the movement that Heidegger in his idiomatic way describes as the ‘from-out-of-itself-toward-there...’, so that the thereby constituted upon-which looks back and into the previously named toward-there.... (Von-sich-aus-hin-zu-auf ..., dergestalt, daß das so sich bildende Worauf-zu zurückblickt und herein in das vorgenannte Hinzu...)’ (Heidegger 1991, 189). In other words, time may be nothing outside the subject, but it nonetheless constitutes the very going outside, or the ecstasy, which first makes possible something like a subject capable of relating to itself. Heidegger therefore remarks that even though Kant did not himself see it, or ‘shrank back’ from seeing it, he still exhibits the originary correspondence between transcendence and selfhood in a very radical way. Accordingly, Kant inexplicitly but effectively dissolves the difference between the ‘I think’ and time, which, as Heidegger writes, ‘no longer stand incompatibly and incomparably at odds, [but rather] are the same’ (Heidegger 1991, 191). Heidegger thus recognizes in Kant a more ‘originary’ conception of time understood precisely as the ecstatic transcendence of temporality, which first allows a being that does not exist before this movement to be thrown back onto its factical being-there from its advance towards death. Such a being is thus granted the possibility of taking over its originary thrownness as its own. In a note to Being and Time, Heidegger therefore remarks that ‘a more radical understanding of time emerges in Kant rather than in Hegel’ (Heidegger 1977, 564), which is why the second part of Being and Time was to have included an exposition of this more radical understanding of time. As we know, however, this second part never came to be. Instead, it detached itself from the initial project of Being and Time and was published two years later as the Kantbuch.
To flesh out this more radical notion of time, Heidegger refers to several passages added to the second edition of the first *Critique* in which Kant elaborates how what he calls the *Gemüt* ‘affects itself through its own activity (*durch eigene Tätigkeit [...] sich selbst affiziert*)’ (Kant 1956, B 68). Here we should note that the *Gemüt* is often translated as ‘mind,’ which arguably lends it too intellectual a coloring, for the *Gemüt* in fact designates the capability of sensing, feeling, becoming moved and affected, which for Kant lies at the very core of what we call subjectivity and selfhood. Kant’s point is precisely to show that the human subject cannot perceive itself in a purely intellectual manner, which he defines as the ‘originary intuition’ of immediate self-activity and spontaneity. Instead, Kant says, the human subject can perceive of itself only in the derivative manner of sensuous intuition, that is, through *time and space*, which also implies that the subject cannot help but alter itself in the process. Let me cite a lengthy but pivotal passage in which Kant explains the inherent self-alteration in self-affection:

If the faculty for becoming conscious of oneself is to seek out (apprehend) what lies in the *Gemüt*, it must affect the *Gemüt*; only in such a way can it produce an intuition of itself. However, the form of that intuition, which is antecedently grounded in the *Gemüt*, determines the way in which the manifold coheres in the *Gemüt*, namely, in the representation of time; there, then, it intuits itself, *not as it would represent itself as immediately self-activating*, but in accordance with the way in which *it is affected from within*, consequently, *as it appears to itself, not as it is*. (Kant 1956, B 69; my emphasis)

Because the self can intuit and become conscious of itself only as it becomes inwardly affected, a fundamental split marks very foundation of any relation to self by which the self is situated in a passive relation to the active affection of itself.

One of Heidegger’s final comments on these passages in Kant is that suddenly, ‘in a heartbeat (*mit einem Schlag*)’ (Heidegger 1991, 191), Kant makes it obvious that the pure self-affection of time is not simply to be found ‘next to’ or ‘alongside’ (*neben*) the pure apperception of the self or the *Gemüt*. Rather, ‘as the ground of the possibility of selfhood (*als Grund der Möglichkeit der Selbstheit*)’, time already lies within pure apperception, first making the *Gemüt* a *Gemüt*’ (Heidegger 1991, 192). This means that ‘[t]he I is so ‘temporal’ that it is time itself’ (1991, 192). To put it otherwise, what we call ‘the subject’ or ‘the self’ is nothing but the bending and folding back of time upon itself. What Heidegger neither cites nor comments on, however, is how this pure self-affection of time, as the ground of selfhood, entails a fundamental *altering* of the *autos*, and as such constitutes the self precisely as *other* than itself. To Derrida, this self-altering of self-affection becomes one of
the crucial elements—almost a refrain—in his many deconstructions of the notion of auto-affection, which traditionally has been considered to be preeminently temporal, leaving very little room for *spatiality*.

2. Auto-Affection as the Originary Complication of Space and Time
As Derrida lays it out in both the *Grammatology* and *Ousia and Grammè*, there appears to be a tendency, stretching from at least Aristotle and Augustine, through Kant, to Husserl and Bergson, of associating time with the condition of *inner* sensibility and sense of self—and hence with subjectivity and self-consciousness. Space, on the other hand, is associated with the form of outer sensibility and hence with the impressions of external object existing ‘outside’ the self-conscious subject. To some extent, Heidegger in his *Kantbuch* and in *Being and Time* both maintains and disrupts this tradition. No doubt the dominance of time over space regarding the sense of self and the existence of Dasein still prevails, since, as we saw, the self or the *I* is nothing but the pure auto-affection of time folding back on itself. Here there is no mention of space. Yet, and this is Heidegger’s disruption, the grounding temporality which constitutes the self in its auto-affection is nothing but *transcendence*, understood as the originary *ec-stasy* of a self that comes into ex-(s)istence only by standing *outside* itself. This is why Derrida considers one of Heidegger’s greatest contributions in *Being and Time*, the *Kantbuch*, and elsewhere to be his destruction of the traditional conflation of time with presence and in particular with the present of self-presence. Dasein has nothing to do with a self-consciousness that synthesizes the succession of now-points from the past and into the future from a point of constant perdurance—a present point of perdurance that in itself would not be affected by the passing of time. This is precisely the tradition that Heidegger breaks with: the understanding of time from a viewpoint that would not itself be temporal, that is, from a viewpoint that would be if not eternal then at least timelessly present. Hence, Heidegger’s insistence on the essential finitude of time.

Yet, even if Derrida, as far as I am aware, does not deconstruct Heidegger’s notion of time at any length anywhere in his oeuvre, one still gets the clear impression that what Derrida finds problematic in Heidegger is that he does not take sufficiently into account the gravity of this ‘originary outside,’ which interrupts the time of presence. Furthermore, Derrida seems to allude to the possibility that the omission of a spatial outside of time is the reason why Heidegger, or at least the early Heidegger, is able to preserve the axiological design that allows him to distinguish between a ‘vulgar’ and an ‘originary’ understanding of time as well as a ‘proper’ and ‘improper’ way of existing temporally. Whether this axiological design undergoes change in Heidegger’s later work, that is, from
the Beiträge onwards, in which space is seemingly afforded more consideration with notions such as ‘time-space’ (Zeit-Raum) and the ‘fourfold’ (Geviert), is unfortunately too great a question for this paper although it most definitely merits discussion. At all events, the early Heidegger’s emphasis on the auto-affection of time and not space as providing the horizon of both the historicity of Being and the temporality of Dasein is what allows for the unification or gathering together of ecstatic existence.

As Derrida explains in the eighth session of Heidegger: The Question of Being and History: ‘[T]his exiting from a self that rebounds onto a self and holds itself in the exit from self gives itself and transmits itself so as to keep it, its own ecstatic movement, in itself, and that is auto-transmission, taking rigorously into account the fact that the absolute form of this movement, of this self-keeping, is not the present or the now’ (Derrida 2013, 272/185). In other words, even if time is no longer subjected to the ideal of self-presence, the grounding of ecstatic time still seems to hand Dasein a string with which it can hold on to itself and resolutely pull itself back to its ‘proper’ being-there from its ecstasies, somewhat like a successful rendition of the fort/da game played by little Ernst in Freud’s Beyond the Pleasure Principle. According to Derrida, this ‘ethico-metaphysical’ possibility of resolutely ‘taking over’ (übernehmhen) one’s own ‘there’ granted by the ‘autotransmission’ (Selbstüberlieferung) of time runs the risk of concealing the very historicity of history. For, as Derrida points out:

If there is an a priori signification that cannot be erased from history—and that Heidegger is moreover the last to want to erase—it is a certain irreducible passivity of ek-sistence and Da-sein. Passivity, the nucleus of passivity, must be understood not on the model of thingly intra-worldliness or as sensibility but, at the very least, as the auto-affection of time by itself. Now, it is this originary passivity that Entschlossenheit runs the risk of dissimulating. (Derrida 2013, 250/169)

One could perhaps add, that what Heidegger’s emphasis on the ‘resolute decision’ of the opening of Dasein (Entschlossenheit) risks dissimulating is the very risk of dissimulation inherent in all auto-affection and hence also in every decision-making. The cut or scission of decision can never be calculated in advance and may perhaps never attain clarity regarding its own appropriateness or inappropriateness.

Even though Derrida does not comment here on Heidegger’s omission of space from the pure auto-affection of time, I believe that this exclusion of the exteriority of space, at least indirectly, becomes an issue for him in ‘Ousia and Grammè.’ Here, Derrida argues that one cannot distinguish between a ‘vulgar’ and an ‘originary’ concept of time, in Heidegger’s sense, because the very concept

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of time ‘as such’ or ‘in itself’ belongs to a metaphysical conceptuality according to which time designates nothing but the dominion of Being (ousia) as presence (parousia). In attempting to produce another concept of time ‘as such,’ Derrida says, ‘one rapidly would come to see that it is constructed out of other metaphysical or onto-theological predicates’ (Derrida 1972a, 73/63). For all his effort to destruct the metaphysics of presence, Heidegger therefore still remains stuck on the flypaper of metaphysical conceptual pairs, such as the ‘proper’ and ‘improper,’ the ‘originary’ and ‘vulgar,’ or the ‘authentic’ and ‘fallen,’ etc. Rather than trying to think time ‘in or for itself,’ Derrida says, one should instead attempt to think the originary co-implication of space and time, which can also be traced in the margins of the traditional texts of metaphysics. Derrida shows how the two most paradigmatic texts that ostensibly present the ‘vulgar’ conception of time—Aristotle’s fourth Book of the *Physics* and the second part of Hegel’s *Encyclopedia* on the philosophy of nature—both offer the resources of a double reading. In Derrida, such a double reading unearths an originary *spacing of time* that keeps the desired time of presence from ever coinciding and becoming present to itself. Thus Derrida focuses his reading on the almost imperceptible and presumably insignificant word ἅμα in Aristotle, designating the ‘the complicity, the common origin of time and space, appearing together [com-paraître] as the condition for all appearing’ (Derrida 1972a, 65/56).

Another name for this this originary complicity or this complex origin of space and time that Derrida coins is *différence*. Referring to the middle voice of the polysemic *différer, différencier, différences*, designates, on the one hand, a timing of space that unendingly *defers* any arrival at a proper destination, and, on the other hand, a spacing of time, which *differs*, divides, distances, and frustrates any time of presence by exposing it to a ‘dead interval’ interrupting the experience of any ‘living present.’ This dead interval marks the *trace* of a non-presence that always already haunts the constitution of presence, since there is no present of self-presence without the supplementary gift of death. In *Voice and Phenomena*, Derrida writes that ‘[s]pace is ‘in’ time; it is time’s pure leaving-itself; it is the ‘outside-itself’ as the self-relation of time’ (Derrida 1993, 96/86). Thus, in his readings of Aristotle, Hegel, and Husserl, Derrida indirectly shows how the auto-affection of Heidegger’s *Kantbuch* cannot be a pure auto-affection of time, as Heidegger insists, since time cannot be purged from the spacing that makes it bend and fold back on itself as other than itself, that is, only by deferring and differing from itself. As Derrida writes in close proximity to both Heidegger and Kant but also in a decisive displacement of them: ‘This movement of *différence* is not something that happens to a transcendental subject; it produces a subject. Auto-affection is not a modality of
experience that characterizes a being that would already be itself (autos). It produces sameness as self-relation within self-difference; it produces sameness as the nonidentical’ (Derrida 1993, 92/82).

According to Derrida, the originary complication of time and space is the condition of possibility for any auto-affection, which produces self-sameness only as the impossibility of its purity. Consequently, if the auto-affection of time always already dissimulates itself in and as spacing, and if the self is constituted as the auto-affectivity of time, then the auto-dissimulation of time as spacing is the primordial heterogeneity that always already makes the auto-affection of the self into a trace of its ‘own’ hetero-affection, a trace of its ‘own’ non-presence. Paradoxically, then, as Derrida writes in the Grammatology, ‘[a]uto-affection constitutes the same (auto) as it divides the same. Privation of presence is the condition of experience, that is to say of presence’ (Derrida 1967, 237/166). This movement of auto-hetero-affection as possibility and impossibility of (pure) auto-affection, is also what Derrida refers to as the ‘archi-trace’ or ‘archi-writing,’ which are not synonymous but supplementary names for what constitutively haunts the present of self-presence, whether this is sought by the eye that fails to catch its own gaze in the mirror, in the hand that in attempting to touch itself spaces itself out and loses ‘contact with itself, precisely in touching itself’ (Derrida 2000b, 47/34), or in the silent voice, which in hearing-itself-speak phantasmatically believes itself capable of reducing ‘even the inward surface of one’s own body’ (Derrida 1993, 89/79). And, as Derrida adds, this auto-affectivity is ‘no doubt the possibility of what is called subjectivity or the for-itself’ (ibid.).

The idea of pure auto-affection as the foundation of subjectivity thus reduces or excludes any sense of both space and materiality, it is a spiritual movement par excellence, a movement in which the soul phantasmatically hears-itself-speak in a time of pure self-presence. With reference to Husserl’s discourse, Derrida writes:

Writing is a body that expresses something only if we actually pronounce the verbal expression that animates it, if its space is temporalized. The word is a body that means something only if an actual intention animates it and makes it pass from the state of inert sonority (Körper) to that of an animated body (Leib). This body proper to words expresses something only if it is animated (sinnbelebt) by an act of meaning (bedeuten) which transforms it into a spiritual flesh (geistige Leiblichkeit). (Derrida 1993, 15/16)

Derrida’s objective with these deconstructive readings is not to assert that auto-affection is simply and straightforwardly impossible. To the contrary, Derrida maintains that a certain auto-affection is the condition of all experience, of sensitivity, desire, and ‘life’ in general, not only for the animals we
call human but for all living things. The point is rather that this auto-affection is possible only in terms of an originary hetero-affection, which infinitely complicates the notions of self and other, appropriation and expropriation, life and death, authenticity and alienation, since there no longer is and never was an authentic self to be alienated in the first place. Rather, there is originary alteration. In other words, the relation of a self to itself is nothing but the altering of itself, even if this altering is not simply nothing. Yet this means that the desire for a pure auto-affection also entails a risk of auto-immunity, since this very desire is possible only in terms of the non-present trace of everything that it desires to exclude, that is, ‘space, the outside, the world, the body etc.’ (Derrida 1993, 92/82).

Thus, as Derrida writes in the Grammatology:

> If the space-time (l'espace-temps) that we inhabit is a priori the space-time of the trace, there is neither pure activity nor pure passivity. This pair of concepts (…) belongs to the myth of the origin of an uninhabited world, of a world alien to the trace: pure presence of the pure present, that one may either call purity of life or purity of death. (Derrida 1967, 411/290-1)

According to Derrida, the exclusion of spatiality and materiality from the auto-affection of time is a phantasm that if actualized would lead to the auto-destruction of the self in the name of purity. For any sense of self, or any self-relation, depends on the trace of an antecedent heterogeneity. Yet, even though Derrida mentions several times the ‘body’ (of the word, of writing, of the speaker) on a par with space and spacing as what is excluded by the phantasm of a pure auto-affection of time, it is not entirely clear how matter or materiality fit into Derrida’s ‘equations’ of auto-hetero-affection.

In his Différence essay, Derrida writes that the interval, which must interrupt the movement of pure auto-affection as a trace of a non-presence in order that this auto-affection become present to itself, might, besides ‘différence,’ ‘archi-writing,’ or ‘archi-trace,’ also be called ‘spacing (espacement),’ a word that marks ‘the becoming-space of time or the becoming-time of space’ (Derrida 1972a, 14/13). As such, all of these ‘nonsynonymous substitutions’ in different ways name the a priori non-presence of the trace, which is ‘(is) (simultaneously) spacing (and) temporization’ (ibid.). So, we explicitly have spacing and temporization. But what about materialization? With regard to the trace Derrida often writes of the ‘fabric,’ ‘inscription,’ ‘imprint’ or ‘mark,’ which are all terms that carry certain connotations of materiality and textuality with them. Yet Derrida rarely mentions matter or materiality as such.

If the space-time that we inhabit is a priori the space-time of the trace, what does this mean in terms of materiality? Does matter matter in the space-time of the trace and, if so, how? Does the trace
have a material aspect to it? Indubitably. But in what way(s)? With these questions it seems we are approaching a domain where not only the distinctions between activity and passivity, as of life and death, begin to oscillate, but also perhaps the distinction between φύσις and νοῦς, that is, between physics and philosophy—at least as traditionally conceived. In other words, it seems we are approaching what Derrida calls ‘the front and frontier of forms of knowledge between phusis and psyche, between the natural sciences and the science of the soul or of man’ (Derrida 2000a, 32/250). And, indeed, this is not an easy frontier to cross.

Nevertheless, with Derrida’s mentioning of a space-time structured by a trace of non-presence we come to the perhaps most problematic parts of this paper. For what I have not been able not to think about since confronting the auto-affection in Kant’s Critique, Heidegger’s reading of Kant, and Derrida’s reading of both in turn, is what it is that makes time bend and fold back on itself as another in the deferring and differing movement of auto-hetero-affection, which constitutes both the condition of possibility and impossibility of self-relation. For as Kant emphasizes, this folding of time does not happen spontaneously in a movement of pure intellectual self-activity. The question is, then, how does time become curved, how does it bend? In order to edge closer to a response to these questions of the curving of time and the possible materiality of the trace-structure of space-time, allow me to interrupt these philosophical readings with an intermezzo of physical speculations. After this intermezzo, I will return in section 4 to Derrida and the question of materiality in the trace-structure of space-time.

3. The General Relativity of Space and Time

With the question of how time bends and folds, a temptation arises to draw what might be nothing more than an empty analogy derived from physics, or more specifically from general relativity.

In 1905, with his so-called special relativity, Einstein introduced the relativity of simultaneity, temporality and spatiality with regard to the constant speed of light in the vacuum, c. In 1915 and 1916 Einstein generalized this relativity to include his new theory of gravity by which space and time, or rather what Minkowski via Riemannian mathematics called ‘spacetime,’ went from being a static to a dynamic entity. According to general relativity, ‘the topology and geometry of a given physical space are defined by the materiality of the bodies and energy fields in it, or indeed that give rise to it’ (Plotnitsky 2016, 214). In contrast to Newtonian mechanics, with its concepts of absolute time and space, general relativity asserts that space and time neither preexist nor are independent from the matter and energy that form it. This is so since in general relativity what bends and folds spacetime
is gravity. In fact, gravity *is nothing but* the curvature of spacetime as modulated by the density of matter and energy. This curvature, in turn, determines the movements of bodies and energies ‘within’ spacetime. As John Archibald Wheeler famously put it, ‘[s]pacetime tells matter how to move; matter tells spacetime how to curve’ (Wheeler 2000, 235). Hence, one of the fundamental differences between Newtonian mechanics and general relativity is that gravity is no longer thought of as a force in space and time but as the dynamic and ongoing interchange between matter or energy and the spacetime which it warps. Gravity is not in space and time, but the very modulation of spacetime. As Einstein formulates it, ‘[a]ccording to the general theory of relativity, the geometrical properties of space are not independent, but they are determined by matter’ (Einstein 2005, 143).

This change in the conception of gravity entails that the ways to think about space and time are radically altered. In Newtonian mechanics, space and time are thought of as absolute and global frames of reference that function a bit like a neutral container or an empty background stage upon which things and events may come to take place, develop, and play themselves out, but which are themselves entirely unaffected by these happenstances and changes. As Newton explains: ‘Absolute, true, and mathematical time, in and of itself and of its own nature, without reference to anything external, flows uniformly and by another name is called duration […] Absolute space, of its own nature without reference to anything external, always remains homogenous and immovable’ (Newton 2016, 408). This view of space and time is completely altered with Einstein’s general relativity. Here time and space not only become inseparable from one another and not only affect what happens with their ‘content’ or their ‘matter,’ but the very properties of spacetime are themselves affected by the distribution of matter and energy in their environment. In general relativity, every single particle modifies the spatiotemporal geometry of its vicinity according to its density of mass, producing variations in the curvature of space and the velocity of time. Thus, if you live on a mountaintop, time passes more rapidly than if you are close to the surface of the earth; if you travel near the speed of light time slows down. Near the horizon of a black whole whose mass is extremely dense, the flow of time is almost entirely arrested and space is ripped apart and folded to such an extent that it absorbs everything in its vicinity, so that not even light can escape from its gravitational field. This means that space and time, or rather space-time, have become entirely *dynamic* terms that can curve, bend, warp, ripple, dilate, and contract *relative* to the distribution of matter and energy in the environment. Furthermore, this dynamic relativism entails that general relativity dismantles time and space as universal backgrounds offering a global frame of reference in relation to which all physical events could be positioned. Instead, in general relativity, physical events take place only in local frames of
reference, which disallows simultaneity between two localities, or two observers, and thus radically decenters the topology and geometry of spacetime. As Einstein explains,

Upon giving up the hypothesis of the absolute character of time, particularly that of simultaneity, the four-dimensionality of the time-space concept was immediately recognized. It is neither the point in space, nor the instant in time, at which something happens that has physical reality, but only the event itself. There is no absolute (independent of the space of reference) relation in space and time.’ (Einstein 1953, 30)

One would think that such remarks from a physicist would be of interest to a phenomenologist like Heidegger who has given so much thought to the Ereignis, which is precisely the ‘giving’ or ‘granting’ of time and space by or as the event. Nevertheless, Heidegger would certainly object to my drawing an analogy between the folding back of time upon itself, pertaining to his Daseinsanalysis or his fundamental ontology, and the curvature of spacetime in general relativity, since, according to him, all physics is concerned with time only as a problem of measurement, that is, with time as a parameter, and not with the phenomenon of time ‘in itself (als es selbst)’ or ‘as such (als solche).’ From 1916, about the same time that Einstein published his papers on general relativity, and all the way up to 1965, Heidegger repeats this critique of physics and echoes Husserl’s statement from his Philosophy and the Crisis of European Humanity. Here Husserl writes that ‘Einstein’s revolutionary innovations (Umwälzungen)’ concern only ‘the formulae through which the idealized and naively objectified physis is dealt with,’ and as such Einstein ‘does not reform the space and time in which our vital life plays itself out (sich unser lebendiges Leben abspielt)’ (Husserl 1976, 343). Heidegger would certainly agree with this and, as we shall see, so would Einstein, at least to a certain extent.

It may be true that Einstein and other physicists do not consider space or time ‘in themselves’ or ‘as such’; after all, Einstein is neither a philosopher nor a phenomenologist. Yet, does this necessarily exclude the possibility that general relativity or other theories of physics have nothing to teach or to inspire philosophy and phenomenology? For instance, why would it not be of interest to a phenomenologist that the way we experience and count on time most of the time seems to be in such stark contrast to what the math and the physics of relativity tells us about time? For one thing, Heidegger complains that one of problems with relativity is that time becomes reversible (this is actually true not only for relativity but also for Newtonian mechanics), and that time therefore has no direction, which seems entirely counter-intuitive to what we experience in our existence. Physicists do not deny this. Certainly, Einstein did not deny this. In fact, in a conversation with and reported by
Rudolph Carnap, Einstein once expressed his worry that the subjective perception of ‘the now’ as followed by another ‘now’ could not be explained within the conceptual framework of physics (cf. Zeh 2007, 200). This statement by Einstein is noteworthy, since Heidegger’s complaint about the physical notion of time, including that of Einsteinian relativity, appears to be rather different, namely, that, like the metaphysical notion of time, it reduces time to a series of equivalent now-points that may be counted and measured in more directions than one. In the Zollikon seminars, which Heidegger conducted with Medard Boss in 1965, he explains how ‘the theory of relativity does not concern an investigative placement (Erörterung) of what time is but only how time in the sense of the succession of a now-sequence (Nacheinanders der Jetztfolge) can be measured’ (Heidegger 1994, 73). According to Heidegger, this entails that the theory of relativity adds nothing new to either the philosophical or the physical notion of time. The latter, within ‘its horizon of measuring time, deals not only with irreversible events, but also with reversible ones’ (Heidegger 1994, 74). In other words, despite its relativization of time, Einstein’s theory still ‘attests to the fact that in physics time is nothing else than the succession of a sequence of nows’ (Heidegger 1994, 74), which is why it cannot account for the irreversibility of existential and experienced time.

Despite their apparent differences concerning what the theory of relativity says about time, Heidegger and Einstein do appear to agree on the fact that there is a contradiction between what we experience throughout out finite existence and what the laws of physics tell us about time. This contradiction is at times referred to by physicists and philosophers alike as the problem of the ‘arrow of time’ (cf. Carroll 2019, 158-9). There are many processes that one rarely witnesses in reverse (without artificial assistance at least); someone becoming younger with the years, grey hair turning black, a wrinkle straightening itself out, digested foodstuff reorganizing into a carrot, or a splintered coffee cup automatically gathering itself back together. These processes undoubtedly appear both unidirectional and irreversible. Yet this unidirectionality and irreversibility is not indicated in the equations of either general relativity or quantum mechanics. Thus one of Heidegger’s repeated criticisms of the physical conception of time, including the one put forward by general relativity, is that it cannot account for the irreversibility and the futural directionality of time, since the mathematization of time, which is also a spatialization of time, allows a process to move both forwards and backwards in the same way that a process can move forwards and backwards in space (Heidegger 2004, 121). In other words, you can walk from one point in space to another point in space and then back again, but the time (and the energy) it takes for you to do so cannot be put in reverse.
Yet what physicists are asking themselves is whether the irreversible directionality or the so-called arrow of time is not to be found in time ‘itself’ or time ‘as such,’ as Heidegger says, but perhaps rather in the second law of thermodynamics, which says that the total entropy of an isolated system can never decrease over time. The problem is that ‘time’ does not seem to be part of any other fundamental law in physics and so some speculate it is not a fundamental property of the cosmos as such but only of the second law of thermodynamics. In other words, the question posed by physics is whether what we experience as the irreversible ‘flow’ or ‘passing’ of time from past into future, is not a characteristic of what we call time ‘as such’ or ‘in itself,’ ‘whatever that might mean, but rather an effect of the increase of entropy in our own bodies, in the local environment surrounding us, as well as in our observable universe. What if what we call the arrow of time is nothing but the increase of entropy? As Brian Greene formulates it, it may be that ‘[t]he arrow of time—the fact that things start like this and end like that but never start like that and end like this—began its flight in the highly ordered, low entropy state of the universe at its inception’ (Greene 2004, 175). Why would such a radical questioning of time and our experience of it not be of interest to a philosophical understanding of time?

Furthermore, what exactly does Heidegger mean when he insists on a phenomenological description of time ‘as such’ or ‘in itself’? As all the metaphors used to describe time reveal, such that time ‘flows’ or that it ‘passes slowly or quickly,’ that time seems ‘long,’ that time ‘presses’ or ‘weighs’ upon you, that you ‘lack’ or ‘waste’ time, it is very difficult to extract a thought, an experience, or a description of time that does not involve a certain spacing and a certain materiality. Are we not always dealing with traces and inscriptions of a time that ‘itself’ has never been present ‘as such’? Do we ever experience temporality without its originary complication with spatiality and materiality? Do we ever experience time ‘as such’ other than in the sedimentations of rock formations, the geological strata of the earth, the survival of fossils or the growth rings of a tree, in the sun moving across the sky and our shadow changing its position on the surface of the ground, in the sagging of the body, the wrinkles on the face, the hardening of the arteries? That is, as traces of an imperceptible increase of entropy?

If the spacetime that we inhabit, as Derrida says, is a priori the spacetime of the trace, are we not obliged to think time ‘as such’ together with—again the ἀμα of Aristotle—the ‘material support of its spatial inscriptions,’ which Martin Hägglund calls the ‘arche-materiality’ of the trace and which, as he says, ‘is implicit both in our understanding of the temporality of living processes and in our understanding of how time is recorded in material structures’ (Hägglund 2016, 45). On this view, the
originary complexity, and hence inseparability of time and space, is structured by the inscriptions of a trace that always already requires a material support. This does not entail that materiality would be the cause of or somehow be prior to space and time. For, in turn, the arche-materiality of the fabric of the trace must itself be thought of as both arche-spatial and arche-temporal and as such as always already exposed to the risk of decay, extinction, and transmutation into cinders. In other words, rather than a chronological or merely logical priority of either materiality, spatiality or temporality, what we are trying to think is a certain equiprimordial interrelation or entanglement of the three. In this light, might not general relativity inspire philosophers and phenomenologists to try to think not only the originary complexity of time and space but also the the arche-materiality of spacetime? An arche-materiality of spacetime that might refer to Derrida’s ‘writing of difference’ or ‘fabric of the trace,’ which again he describes as the ‘origin of the experience of space and time,’ inasmuch as it first ‘permits the difference between space and time to be articulated’ (Derrida 1967, 96/65-66)? To pursue this line of thought, let us try to think together/apart Derrida’s concept of time-space as modulated by the trace and Einstein’s spacetime as modulated by the gravitational pull of matter and energy.

4. The Play of Différence Approaching the Dynamics of Spacetime
In section 2, we mentioned Derrida’s statement from Ousia and Gramme that ‘the complicity, the common origin of time and space, appearing together [com-paraître] as the condition for all appearing’ (Derrida 1972a, 65/56). In turn, this complicity of space and time was related to the movement of différence that produces a self-relation within self-difference and sameness as the non-identical and thus inscribes the self into the trace-structure of auto-hetero-affection. In section 3, we then introduced the thought of an arche-materiality of spacetime understood as the fabric of the trace, which first allows for time and space to be articulated in their difference. In this section, we will return to the question of materiality or materialization in the space-time that according to Derrida is a priori that of the trace.

In an interview with Jean-Louis Houdebine and Guy Scarpetta in 1971, Derrida reflects on his own reluctance with regard to the concepts of ‘matter’ and ‘materiality.’ As Derrida explains, the reason for his reserve with regard to the word ‘matter,’ is not due to ‘some idealist or spiritualist kind of reservation’ (Derrida 1972b, 87/64). It is not the word ‘matter’ as such that is problematic to Derrida, but rather its repeated reinscription into a logocentric system of thought that ascribes to it ‘values associated with those of thing, reality, presence in general, sensible presence, for example, substantial plenitude, content, referent, etc.’ (Derrida 1972b, 87/64). In other words, as Derrida
continues, ‘the signifier ‘matter’ appears to me problematical only at the moment when its reinscription cannot avoid making of it a new fundamental principle which, by means of theoretical regression, would be reconstituted into a ‘transcendental signified’” (Derrida 1972b, 88/65). What is needed, then, is a deconstructing double-reading of the mark of ‘matter,’ in order to liberate it from its confinement in the metaphysical oppositions of matter/spirit, matter/form, and here perhaps we could add, matter/space-time. Derrida then suggests that, ‘within’ the general economy of difference (which has no ‘within’ in distinction from an ‘outside’), the signifier of ‘matter’ may be read as a designation of ‘radical alterity’ and, as he specifies in a parenthesis, of radical alterity ‘in relation to philosophical oppositions’ (Derrida 1972b, 87/64). If Derrida in a certain sense therefore ascribes to being a materialist, it is in the precise sense that he insists on matter as ‘the absolute exterior [dehors] of opposition’ (Derrida 1972b, 89/66). This, in turn, connects the term ‘matter’ with the ‘generalization of the concept of text,’ which on the one hand has ‘no simple exterior limit,’ and which, on the other hand, does not wind up as a ‘definition of a new self-interiority’ (Derrida 1972b, 66). In this way, Derrida propounds a sort of con-textual materialism, but a very strange or ghostly kind, one in which matter is disconnected from any relation to presence and is instead related to the non-relation of radical alterity, which is to say, to the trace.

One of the few places where Derrida explicitly comments on general relativity is in a response to a question posed by Jean Hyppolite at the seminal symposium on The Languages of Criticism and the Sciences of Man: The Structuralist Controversy held at Johns Hopkins University in 1966. In his paper Structure, Sign, and Play in the Discourse of the Human Sciences, Derrida performs a deconstruction of a notion of ‘structure,’ which either presupposes the presence of a center or mourns its loss, and counterposes it to the notion of a ‘play of structure’ that affirms ‘the non-center otherwise than as loss of the center’ (Macksey & Donato 1979, 264).

During the succeeding discussion, Hyppolite asks Derrida to expound on his concept of center with regard to the structure of Einstein’s theory of relativity in which, ‘we see a constant appear, a constant which is a combination of space-time, which does not belong to any of the experimenters who live the experience, but which, in a way, dominates the whole construct; and this notion of the constant—is this the center?’ (Macksey & Donato 1979, 266). There has been much controversy about what Hyppolite is referring to with his mention of a constant, but in all likelihood Hyppolite is not referring to a numerical constant, such as the speed of light c, but rather to the mathematical
concept of Minkowskian spacetime itself.\(^1\) In Arkady Plotnitsky’s interpretation, which I will be
drawing on in what follows, one could read Hyppolite’s question as aiming at special relativity and
the idea that the distinction between and measurement of space and time can no longer be determined
universally, as in Newtonian physics, but always only locally from a particular observer with a
specific frame of reference. Accordingly, there is a certain decentering at the center of the theory of
special relativity, since there is no ‘uniquely privileged frame of reference—a center from which an
observer could master the field, that is, the whole of space-time (if such a thing as the whole of space-
time is indeed possible)’ (Plotnitsky 2002, 183). In this sense, special relativity would cohere, to a
certain extent at least, with Derrida propounding of the ‘play of structure’ as the still ‘unthinkable’
thought of a structure without center (Macksey & Donato 1979, 248). Derrida relates this play of a
structure without center to the Nietzschean conception of ‘the freeplay of the world’ (Macksey &
Donato 1979, 264, my emphasis), in contrast to a play in the world, which again reflects the shift
from Newtonian space and time as absolute frames of reference, to Einsteinian spacetime, which, in
general relativity, becomes a dynamical geometry modulated by the decentered play of forces and
events. On this view, the Einsteinian field equations that describe the dynamical geometry of
spacetime in its interaction with the distribution of ‘energy-like quantities, including momentum,
pressure, and matter’ within it (Carroll 2019, 270), could indeed be seen as corresponding with
Derrida’s response to Hyppolite, namely, that ‘the Einsteinian constant is not a constant, is not a

\(^1\) The exchange between Hyppolite and Derrida in 1966 practically triggered the so-called ‘Science Wars’ of the 1990s,
which consisted in a series of intellectual exchanges, but mostly attacks, between so-called ‘scientific realists’ and
‘postmodern critics.’ In 1994, biologist Paul R. Gross and mathematician Norman Levitt published their Higher
Superstition: The Academic Left and Its Quarrels with Science in which they provide their response to what they call ‘the
systematic disparagement of modern science’ carried out by an ‘intellectual left’ that propounded all kinds of ‘anti-
scientific nonsense’ into the ‘academic bloodstream.’ In their book, Gross and Levitt very briefly mention Derrida’s
response to Hyppolite regarding the ‘Einsteinian constant’ and, in my reading, misinterpret it as referring to the numeric
constant of the speed of light rather than the mathematical concept of spacetime. In their view, Derrida’s ‘verbiage’ is
nothing but a pretentious attempt ‘to claim familiarity with deep scientific matters’ and thus ultimately a ‘sheer bluff’
(Gross & Levitt 1998, 79). What is astonishing about Gross and Levitt’s book is that it is full of refutations without any
rigorous arguments or demonstrations and hardly any textual support for their claims. Thus, they hardly live up to the
scientific standards that they portend to defend. For instance, one of their few references to an example of Derrida’s
‘abuse’ of scientific concepts is simply cited wrongly; Gross and Levitt claim that Derrida’s employment of the syntagma
‘differential topology’ in his reading of Kafka’s Before the Law is yet another attempt by Derrida to borrow from scientific
terminology in order to ‘create the impression of rigor and congruity with ‘cutting edge’ science’ (Gross & Levitt 1998,
293). However, as Plotnitsky has pointed out, Derrida never employs the term ‘differential topology’ but instead writes
‘differential topology [topique différentielle]’ (Derrida 1992, 208), which, if Gross and Levitt had bothered to read the
text, would of course have proven to have a very specific and subtle point to it. The point, namely, that the ‘differential
topology’ of Kafka’s law is actually an ‘otopology—a ‘topology’ without its own place or without the possibility of
linking it to a place or a space’ (Plotnitsky 2002, 170). As far as I am aware, Derrida published only a short and somewhat
discouraged comment on the whole ordeal in Le Monde in 1997 as a response to the so-called ‘Sokal-hoax’ of 1996, in
which the physicist Alan Sokal published a sham article claiming that quantum mechanics was but a linguistic and social
construct that ultimately supported the postmodern critique of the possibility of attaining objective scientific knowledge.
Cf. Sokal 1996.
center. It is the very concept of variability—it is, finally, the concept of the game. In other words, it is not the concept of something—of a center starting from which an observer could master the field—but the very concept of the game [jeu]’ (Macksey & Donato 1979, 267).

In his Différence essay, Derrida relates the notion of ‘play’ to différance, understood precisely as a play of differences that maintains itself beyond oppositions in designating ‘the unity of chance [hasard] and necessity in calculations without end’ (Derrida 1972a, 11/15). This brings us back to our contention in section 2 that what we may now call the ‘play of différance’ (Derrida 1972a, 11) designates the originary complicity of time and space ‘appearing together as the condition for all appearing’ (Derrida 1972a, 65/56). Accordingly, as Plotnitsky puts it, ‘différance produces, as its effects, the spatiality of space, the temporality of time, the spatiality of time, the temporality of space, and so forth’ (Plotnitsky 2016, 218). Yet, as we have also seen, this differantial play of spacetime is structured only by the absent center of the trace, and thus introduces a conception of materiality as radical alterity, that is, in other words, a conception of chance. These aspects of ‘radical alterity’ and the ‘unthinkable’ play of chance, is one reason why Plotnitsky further argues that although the dynamics of différance are ‘homomorphic to those of relativity (…) the Derridean conceptual architecture is ultimately quantum-mechanic-like, rather than relativistic’ (Plotnitsky 2016, 218-19).

Unfortunately, it would exceed the scope of this paper to pursue an inquiry into the possible correlations between Derridean deconstruction and quantum mechanics. However, for future research it would be intriguing to look into how Derrida’s ‘space-time of the trace’ might be related to what Einstein famously described as ‘spooky actions at a distance’ (Born & Einstein, 158), referring to the theoretical phenomenon of ‘quantum entanglement’ and its violation of the principle of both separability and locality in general relativity. Specifically, it might be worthwhile to pursue whether and how the ‘play of différance’ as the efficacity of spacing and temporalization, might be related to what physicists, information scientists, and mathematicians are today theorizing as ‘emergent spacetime’ or ‘emergent gravity.’ Basically, these theories seek to derive the dynamic geometry of spacetime from the interaction—or intra-action—of quantum forces and energy fields, rather than presuming space and time to be fundamental to the description of the latter.2 for the moment, however, this topic must be postponed to a future paper.

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2 It is a well-known problem in physics that gravity cannot be quantized without entailing serious theoretical and mathematical inconsistences. This is one of the major obstacles for combining general relativity and quantum mechanics, since the quantizing of gravity ‘predicts nonsense, if it predicts anything at all’ (Carroll 2019, 274). Recently, however, there have been attempts at reversing the order of procedure so that, instead of beginning with a relativistic theory of gravity and then quantizing it, we begin with the quantum state of the universe and then see how the classical and
5. Concluding remarks: Stringent Kant

Approaching the end of this paper, allow me to return once more to my starting point in Kant’s first Critique and to another addition that he makes to the second edition, namely, his Refutation of Idealism. For, as Derrida remarks in a parenthesis of the Grammatology, whereas time in the A edition of the transcendental aesthetics was said to be ‘the form of all sensible phenomena, internal and external, [which] seems to dominate space, the form of external sensible phenomena (...), the ‘refutation of idealism’ will reverse that order’ (Derrida 1967, 411/290; my emphasis). What Kant supplements with his refutation of idealism is, in fact, quite astonishing, for not only does he seem to reverse the order of time and space, he also seems to introduce matter as an a priori of all experience including ‘inner’ experience, earlier said to be the pure auto-affection of time bending and folding back on itself. Kant writes:

Not only can we perceive all time-determination only through the change in outer relations (motion) relative to that which persists in space (e.g., the motion of the sun with regard to the objects on the earth); we do not even have anything persistent on which we could base the concepts of a substance, as intuition, except merely matter, and even this persistence is not drawn from outer experience, but rather is presupposed a priori as the necessary condition of all time-determination, yet also presupposed as the determination of inner sense in regard to our own existence through the existence of outside things (Kant 1956, B 278. My emphasis).

Is this not an exhibition of Kant’s apprehension of an originary complication of time, space, and matter, giving rise to the auto-hetero-affection that conditions all our experiences including the experience of ourselves? In other words, are we presented with a sort of precursor of general relativity and perhaps even of a quantum mechanics in Kant? Indeed, already in his pre-critical writings Kant, heavily influenced by Leibniz, stated the non-idealistic intuition and rather materialistic intuition that space does not exist prior to the interaction of forces ‘within’ it. In a text of 1746 with the very long title Thoughts on the True Estimation of Living Forces and Assessment of the Demonstrations that Leibniz and Other Scholars of Mechanics Have Made Use of in This Controversial Subject, Together with Some Prefatory Considerations Pertaining to the Force of Bodies in General, Kant writes:

relativistic notions of space and time may be derived from this state. As Carroll explains it, the rather mind bending task is ‘to contemplate the idea that spacetime isn’t fundamental, but emerges from the wave function’ (Carroll 2019, 285).
It is easy to demonstrate that there would be no space and no extension if the substances did not have any forces that could act externally of themselves. For without this force there is no connection (Verbindung), and without this no order, and without this, finally, no space. It is more difficult to realize, however, how the manifold dimensions (die Vielheit der Abmessungen) of space derived from the law according to which this force of the substances acts externally to themselves. (Kant 2016, A12)

In other words, space is no longer understood as the principally empty stage upon which matter comes to play its role. Rather, it is the other way around; space emerges and takes shape only according to the way in which material forces interact with one another—and here one is even tempted to say the way in which material forces become entangled with one another. For as Kant adds, it is probable that ‘the properties of extension, and hence also its three-dimensionality, must also be based on the properties of the force substances possess in respect of the things with which they are connected’ (Kant 2016, A12). According to Kant, however, the law of the interactions between material forces is entirely arbitrary: ‘God could have chosen another’ (Kant 2016, A13). This in turn means that the three-dimensional shape of space that we perceive is not a necessary condition of our perception but rather an outcome of the contingent interactions, or perhaps entanglements, of material forces.

As a brief aside, this remark by Kant is interesting for a contemporary reader, considering the fact that recent developments within cosmological physics show how the mathematics of string theory, which has the potential of ‘mending the rift between general relativity and quantum mechanics’ (Greene 2004, 374), require that additional dimensions of spacetime be granted for its consistency to endure. More precisely, if we grant the universe extra dimensions—twenty six or ten dimensions, depending on whether we are dealing with a theory that considers only force-carrying particles like photons or gravitons (bosonic string theory) or both force carrying and matter forming particles like quarks and electrons (superstring theory)—we avoid a scenario where ‘the mathematics of string theory falls apart and its equations are rendered meaningless’ (Greene 2004, 370). However, these extra dimensions seem to be somehow folded into, curled up within, or ‘compacted’ behind the four dimensions of spacetime that we are familiar with (height, width, length, and time) and thus they remain hidden to our more or less ‘ordinary’ perception of the observable universe. Thus, as Kant already suspected, our three-dimensional perception of space may be nothing but a consequence of the arbitrary interactions of material forces that curve the spacetime within which we perceive. And, we might now add with Greene, ‘[i]f superstring theory is proven correct, we will be forced to accept
that the reality we have known is but a delicate chiffon draped over a thick and richly textured cosmic fabric’ (Greene 2004, 19).

In some places, Einstein does acknowledge a certain kinship between Kant’s thoughts on time and space and those of his own. Hence, in a letter to Ernst Cassirer he writes that ‘Newton’s theory requires an absolute (objective) space in order to be able to attribute real meaning to acceleration, which Kant does not seem to have recognized’ (Einstein 2006, 44). In his preface to the English translation of Kant’s Critical Philosophy, Gilles Deleuze also points towards such an avant-garde in Kant when he suggests that Kant’s conception of the relation of the I to itself constituted as the auto-affection of time, whereby the I becomes ‘an Other which affects it,’ may be read as the philosophical rendition of Rimbaud’s poetic formula ‘I is another.’ According to Deleuze, Kant internalizes time as an exteriority that alters the form of the I from within its very matter. This further means ‘not only that time is internal to us, but that our interiority constantly divides us from ourselves, splits us in two: a splitting in two which never runs its course, since time has no end. A giddiness, an oscillation which constitutes time’ (Deleuze 1963, viii–ix). This unending oscillation of time obfuscates the very division between form and matter, as between transcendental and empirical, whereby the subject can no longer be conceived of as the mould of its material content but is rather turned into ‘an infinite modulation.’ As a final comment, I could add, perhaps, that this infinite modulation of the subject is not only one of spacing of time and the timing of space, but also of the finite matter that modulates spacetime, since, in the words of Derrida, ‘the infinite différance is finite’ (Derrida 1993, 114/102).
References

Unless otherwise stated, all translations of German texts are my own. Existing English translations of French texts have been modified occasionally and are followed by both French and English pagination.


