

Parameter Breach: Châtelet and the Ground of the Diagram

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Abstract

The following investigates the work of the still too neglected thinker Gilles Châtelet with a particular emphasis on how his understanding of intuition functions across philosophy, science, and mathematics. The question is whether intuition (as Châtelet understands in a generally Schellingian formulation) trivializes the processes of scientific and mathematical thought subjecting them to an experimental errancy of chance. While it is common to dismiss Schelling's notion of intellectual intuition as god-like knowledge following Kant, even a cursory examination of how Schelling uses the term throughout his career, and how it relates to other forms, demonstrates that intuition is more of an experimental immediacy that is imperfectly conceptually laden yet effective. Though Schelling is often considered an anti-formal or anti logical thinker (at least in contradistinction to Hegel) this is surely not the case if one allows the diagram to be considered as formal as the statement of logic. For Châtelet, Schelling's philosophy of powers is what allows for a suspension of things in such a manner that necessitates understanding the map of nature in terms of vectors, lines, and fields. What immediately comes into question is the status of this expanded notion of the formal vis a vis the metaphysical and of the egress of thought into nature and nature into thought.

Introduction

At the level of fundamental discoveries, the work of a physicist is comparable to that of the painter who has to smash figurative data.

Gilles Châtelet, *Figuring Space*, 71

Similar yet in important distinction from Deleuze, Châtelet believes that much of 20th century philosophy misunderstands the type of thought involved in mathematics and that it is a type of thinking that cannot be reconciled either by Deleuze's radical empiricism nor by any inflated notion of phenomenology (whether following from Kantian insights or running against them). Yet Châtelet's alternative which becomes a kind of speculative experimentalism (in which philosophical concepts are materially 'edited' by physical experimentation,

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generates (or perhaps merely toys with) the dangerous possibility of a philosophical passivity strikingly similar to concerns which occupied the last days of Merleau-Ponty (which brings us back to phenomenology). Such a passivity appears to go against the very spirit of Châtelet's entire enterprise unless intuition is understood as coupled to its immediate surroundings as a kind of parameter and yet this implies a difference between Châtelet and Deleuze, namely regarding the emphasis of the spatial concerns of the thinker potentially at the cost of temporality as the privileged site of the synthesis of difference. Much will depend upon the specific difference between intuition as a form of creation or more as a form of discovery.¹

With both Châtelet Merleau-Ponty the notion of ground as a continuity between thought and nature but one that does not offer itself up for direct understanding necessitates diagrammatic and gestural investigations. Rather than being a metaphysical alibi for mystification, the notion of ground across philosophy and the sciences instead engenders the need for indirect understandings (or demonstrations) of the depth of constructive constraints both in and outside of the body that experiments.

Chatelet's Schellingian Intuitions

The thought experiment does not claim to predict or verify a law, nor to tackle the causality of things head-on; it seeks rather to avoid it, to do away with weighty truths and available intuitions. If it is 'ideal' or 'theoretical', it is not because it is impossible to carry out with 'real' instruments, but because it claims to question or uncover processes of idealization.

Gilles Châtelet, *Figuring Space*, 11.

It is important to situate Châtelet in relation to the context of romantic thought and how he sees his own work in philosophy (read as philosophy of science). Because Châtelet does not seem to acknowledge a conceptual border between philosophy and the physical sciences it becomes difficult to ascertain how the actual practices of philosophy, or mathematics, or philosophy are what distinguish a virtual trajectory of thought from one domain or another. This is made even more difficult by the way in which Châtelet emphasizes the role of metaphor, intuition, and the diagram as modes of expression of a continuous virtuality of action the border of which remains ambiguous.

¹ For more on this line of thought please see Hare & Woodard 2017.

Châtelet invokes a progression of modes of expression (intuition, gestures, diagrams, and signs) by which he explains the genesis of concepts across philosophy and mathematics. Intuition is articulated in the form of a survey but Châtelet is also careful to distinguish this impure form of quick summary from that utilized by Descartes or other rationalists.

Intuition for Châtelet, following Schelling, is a primordial form of thinking that attempts to describe the sensorial-formal tethers between more properly articulated modes of thinking. This implies that intuition's much critiqued 'immediac' must be thought through spatial rather than temporal means in its intellectual form, and as not sheerly spatial in its productive form. The purportedly sheerly formal aspects of intuition (as internal) disrupt the empirical content as they are empirically and pragmatically articulated over time and space. In other words, indirect spatial constraints are involved in a 'eureka' moment (usually retroactively coded as temporally instantaneous) and indirect temporal constraints are involved in the 'know-how' moments of seemingly effortless pragmatic production.

Thought and what it thinks are interlaced but 'from where' this is grasped, and how this is examined is the persistent problem particularly as it 'ranks' and distributes types of thinking and their powers each according to a particular position on that spectrum. My wager is that Schelling's non-reductive naturalism posits something like a structural account of a prior auto-catalytic (or self-augmentative) nature by which the epistemological articulation of such a nature is required to make sense of thought. While Schelling is often critiqued as haphazardly applying cognitive structures onto nature, he is rather making a naturalist claim about the structure of nature such that something like cognition (as we experience it) may come to be, and such that capacities like understanding or intuition follow. Thought is an expression of nature and not its sole model. This in turn illustrates why Schelling attempts to view the genesis of cognitive features as a kind of geology, of the movement from intuition all the way up to reflection and abstraction. Furthermore, this is why Schelling sees an analogous parallel in consciousness, that types of thinking can be described as epoch's in the history of natural cognition.

Intellectual intuition and productive intuition are 'unthinking' types of thinking, or perhaps, non-intentional (or non-guided) forms of thought where the former takes for granted its transcendental position, that is, as working from ideal grounds, whereas the latter functions by taken the object as material. In his "On the True Concept" essay Schelling makes the division between these types explicit (the intellectual intuition relates to the transcendental philosophy and productive intuition relates to *Naturphilosophie*).

What is also important is that, as Schelling puts it in the same essay, that the transcendental philosophy is derived from the *Naturphilosophie* even though the former is 'experienced first' (hence why abstraction is not an extension or addition of ideal content but a depotentialization, a reduction). This is Schelling's response to Hegel's famous slander about 'being shot from a pistol' – Schelling's point is that there is a kind of intuition the builder of the gun has that is quite different from the person shooting it. The function of exhibition, in Schelling's

term, or expression reveals the blurred lines and borrowing across conceptual spaces in the different kinds of intuitions.

In one of his early lectures on the *Method of Academic Study* (1802/1803) Schelling writes:

Philosophy and mathematics are alike in that both are founded upon the absolute identity of the universal and the particular. Hence, both are purely intuitive, since every relationship of this type is perceived through intuition. But whereas mathematical intuition is a reflected one, philosophical intuition is rational or intellectual intuition and identical with its object—with primordial knowledge itself. Philosophical construction interprets what is grasped in intellectual intuition. The particular identities, which like the universal identity, express absolute primordial knowledge can be grasped only in intellectual intuition, and in this sense are Ideas, Philosophy is therefore the science of Ideas or the eternal archetypes of things. Without intellectual intuition no philosophy! (Schelling 1965: 49)

If this approach itself appears too idealistic, in the naive sense of idealism, one can take a look at how in terms of *Naturphilosophie*, Schelling situates the same capacity but still from the transcendental point of view in 1797:

That is, just as the human reason represents the world only according to a certain form, whose visible expression is the human organization, so every organism is the expression of a certain schematism of the intuition of the world. Just as we surely see that our intuition of the world is determined through our original limitation, without our being able to explain why we are precisely limited in this way, and why our intuition of the world is precisely this and no other, so too the life and the intelligence of animals can be just a peculiar (although inconceivable) kind of original limitation, and only their mode of limitation would distinguish them from us. (Schelling 2004: 132)

As one of the more base components of philosophy, intellectual intuition, for Schelling, is a cognitive capacity that helps one pivot between multiple methods of thought distributed between *Naturphilosophie* and transcendental philosophy. Intuition functions not as an immediate and direct conduit between mind and nature, but as an indirect and potentially vague attempt at thinking the continuity between nature and mind in a very localized and minimal sense, while intellectual intuition posits a generic position for thought, an indifference point, a *seemingly* unconditioned place yet, as soon as that intuition encounters any form, it takes that form as potentially both a subject and an object.

Without intellectual intuition as articulated by Schelling one is hard pressed to articulate a minimal form of thought that justifies a basic level of philosophical sufficiency. Intellectual intuition, for Schelling, merely names the constructive capacity of the mind bound to a situation and it should not be equated with, or expanded beyond, givenness as such. Whereas Fichte made intellectual intuition a necessary postulate in order to guarantee the ground of

the I (as was required by Kant's unity of apperception) Schelling thinks that this too easily relies upon reason to extract itself from its non-reasonable grounds to justify its reasonableness.²

This is also why Schelling finds the relation of Kant's philosophy to the status of the *a priori* problematic, and instead suggests the categories of *prius* and *posterius* (articulated in spatial and temporal terms). The thing in itself, taken into thinking, would be the *prius* (the first instance of a theoretical gesture) whereas the work of the understanding would not be the result then (the *posterius*) but the middle laborer between the thing in itself in thought (which for Schelling are processes not things) and this 'x +' the determinations of the understanding where the + would be the tethers of intuition and the as the thinking conceptualized along the way (Schelling 1994: 104).

Despite many interpretative campaigns set out to kill it, Schelling's *Naturphilosophie* named an earnest attempt to construct a non-reductionist naturalism. It is often only in viewing Schelling's *naturphilosophie* as an abandoned stage of his thinking, or as a nascent form of Hegel's far more restricted naturalism, that Schelling's method appears fruitless. Examining only two of Schelling's interconnected *Naturphilosophical* texts (the *First Outline*, and the *Ideas for a Philosophy of Nature*) the first from the transcendental perspective and the second from the *Naturphilosophical* perspective gives one the sense of the stakes for Schelling.

Châtelet is one of the few thinkers who understood the importance of the movement between these forms, that a depotentiating and potentiating of transcendental and natural positions is required to transit, the theories of archetypes, forms, experiments, or hypotheses are exactly these kinds of efforts. As Châtelet outlines it, the transcendental approach of Schelling, particularly when viewed in relation to the sciences, requires a immanent space to be bifurcated or crossed by the transcendental thought. The abstract space of scientific experiment, the beginning point of the experiment, is represented by the indifference point, a 0, but one that is not an annulment of processes but a balance or pivot which, in his terms, escapes the 'stupidity of the sum' (Châtelet 1999: 81).

The spatial character of Schelling's intuition suggests that inner and outer sense, in the way space is an array of sense, cannot be sub-conceptual because the space from where the intuition issues shapes not merely the form of the thought-act (whether as a simply demonstrative 'this' to the deployment of an entire philosophical system) but the space of thought is simultaneously made of these deployments and rearranged by them. Thus, the immanent condition requires a transcendental rupture in order for the transcendental to not be merely focused on past conditions for the possibility of experience but also future ones (thus we move into the temporal array). Demonstrative acts, for Schelling, reform the space of thought not by elimination or inflation but by topological egress and ingress (or in Châtelet's terms horizons and knots).

² Deleuze could be viewed similarly here but perhaps moving in the opposite direction by making ubiquitous subjectivity as popping up everywhere (since for Schelling, the natural conditions cannot be overcome).

The interiorization of the interior (reflection) deployed alongside the exteriorization of the exterior (speculation) is thus not a negation (0) but the diagrammatic equivalent of a slingshot in the space of reasons (intellectual intuition). While the interiorization of the exterior (representation) coupled with the exteriorization of the interior (sense) is the careful construction of pragmatism.

This portrays what the organic means for Schelling's thought, and for intuition's capacities, organicism is not a peaceful state of homeostasis, but a generative metastability. Philosophy is the mutation which makes the anatomy of the mind possible.

Schelling against Deleuze

To examine how Châtelet and Deleuze differ we can see how the very notion of the primordality of the virtual of Châtelet contains Schellingian sympathies, sympathies which are not in accordance with Deleuze's understanding of the same notion of primordality especially thought in terms of ground.

The closing chapters of Iain Hamilton Grant's *Philosophies of Nature after Schelling* present a dense but rapid critique of Deleuze and Guattari's misreading of Schelling and mishandling of the *geophilosophical*. In particular, and as Grant has emphasized in various talks, Deleuze falls closer to a Fichtean position than to a Schellingian way – Deleuze maintains a distinction between nature and freedom as well as a pluralism which allows the metaphysical all to always be thought via the fireworks of the conceptual engineer, which clashes with Schelling's (and by extension Grant's) insistence that nature is ultimately ungrounded and as such *unprethinkable (unvordenkliche)*.³

There are many important issues at stake in this difference – Deleuze's equation of pluralism and monism rides (at least in part) on the carving up of the metaphysical with the concept by way of a conceptual enriching of sense with a logic that guarantees that thought and being have relatively smooth communication. Deleuze's mistrust of science as a molar analysis and its seemingly fated corruption as state science further drives a wedge between Deleuze and Schelling as the latter refused to denigrate the types of thinking occurring in the (especially physical) sciences as merely a lesser form of thought (a capture or reduction rather than a creation). While this divisions are massive and the paths from them lead to too many fields of problems, one can focus on the barest structural difference and the impacts it has for the methods, and the relation between method and thought, in and across Deleuze and Schelling's work, namely, the problem of ground.

Deleuze speaks of Schelling most extensively in his lectures on ground and emphasizes Schelling's work on myth. But of course, the question of ground in Schelling cuts across his entire work and it may be that Deleuze's discussion of Schelling in *Difference and Repetition*

³ For another approach to the Deleuze and Schelling relation, see Bruff 2019.

and *What is Grounding?* may demonstrate an all too familiar laziness when reading Schelling – that he was systematically inconsistent, that he could never make up his mind, never finish. To view Schelling in this manner is read him through the eyes of Hegelianism (as merely a step on the path to the ‘end of philosophy’ despite Schelling outliving Hegel) as well as disregard Schelling’s consistent assertion that he did not want, nor think it even possible, to have one system.

But the question of ground is not simply a question for system or for the doing of philosophy (despite the use of geophilosophy in Deleuze and Guattari’s *What is Philosophy?*) but speaks to a metaphysical form of explanation that critically differs from mechanical causation. For Schelling mechanism is, in its proper limits, a proper means of understanding parts of the universe but he does not think that it does justice to organic systems or to the more complex notion of systems that include feedback and non-linear dynamics. The logic of ground is a supplement to the logic of mechanism (as he puts it in *On the World Soul*) but it is also a form of metaphysical explanation since it cuts across all realms (inorganic, organic, mental, physical, transcendental and so on).

For Schelling, and as Iain Hamilton Grant has pointed out, grounding is a way of rethinking relation (discussed in terms of the bond or the copula) as one coded by asymmetrical dependence understood most clearly in the temporal terms of antecedent and consequent. In the *Freiheitschrift*, after arguing against normative declarations on the status of matter (the onto-theological association of matter with evil) Schelling writes that we cannot let capacities rest in matter either and that to understand what an entity is in its relation to other entity requires a logic of grounding in which that which grounds makes the grounded possible (but does not fully cause it) and what is grounded not only expresses something in the ground that the ground could not express on its own but also recodes the ground anew once the grounded has been grounded.

Schelling’s example is that of mother and child – the child only comes about because of the mother but the mother only becomes a mother because of the existence of the child (Schelling 2006: 13). Another aspect of Schelling’s point is to show dependence is not the elimination of freedom but its very ground – to say that the child is not free because of need to be born out of the mother is absurd since it would not exist otherwise. Similarly, the mother being able to be a mother is a Kantian sense of freedom (‘freedom to’ rather than ‘freedom from’). One could respond that the way in which the child makes the mother a mother is not the same as the way as the mother makes the child and child but this is why, at least in part, why Schelling spends so much time ungrounding both matter and essence – they cannot be thought as self-standing things but only a certain means of thinking the imperfect capture of nature’s (and by consequence) mind’s potencies.

This is furthermore connected to Schelling’s monism and the notion of the unground which connects (not simply contains or simply grounds) the very relation of ground and grounded or subject and object or any related entities are not substantially related by the

relation but connected at a deeper level because of a shared exhibition of similar capacities and differing lines of creation (via antecedence and consequence). Schelling sees such a logic of ungrounded connection as part of a far older tradition, namely that of Plato or even earlier Parmenides. When Schelling writes that a body is blue means that way does not simply attach the concept of blueness to this object but rather that there is something (here the world thing is misleading) which exhibits both blueness and bodyness.

Particularity is thus secondary and Schelling would be resistant to Deleuze's sympathies for Aristotle or Leibniz and other thinkers of the particular over the All (as the One). But what is important to emphasize here is how the relation of plurality and monism plays into the question of ground as an alternative (or not) to mechanistic explanation and whether grounding is simply a general non-reductive form of explanation (which may be metaphysical) or whether it has an altogether different function in Deleuze. As it appears diagonally in *Difference and Repetition* it may be that grounding, or something like it, replaces causation (we could think here of Deleuze's comments about the illusory status of the laws of thermodynamics in Chapter 5 of *Difference and Repetition*).⁴ Whereas for Schelling, as was already mentioned, grounding accompanies mechanism and cannot be said to replace it.

Yet what exactly thought can do appears similar yet radically different in Deleuze and Schelling's cases. In part we could examine the complex ways in which Deleuze adapts the Principle of Sufficient Reason whereas Schelling would seem to reject it. (Schelling asks how nature got caught in the nets of reason in the first place?) Of course Deleuze's articulation of the principle is not so straightforward and seems to lie closer to Spinoza's version of the principle rather than Leibniz's. Again the difference would seem to lie in the conceptually laden aspect of sense which allows us to circumvent problems of representation and other Kantian roadblocks while Schelling still sees difficulty in understanding how and by what means humans can be said to access nature despite being caused by, or better put, grounded in nature (Deleuze 1992: 191).⁵

In *What is Grounding?* Deleuze repeatedly shows how human culture raises nature up, improves upon, grants it the grace of history. It is telling that the voices that Deleuze explores the most are those concerned with the will (Nietzsche especially) in that grounding and providing reasons become closer and closer aligned. While Deleuze's reasons or reasonability may be Spinozist in the sense that they follow from the casual network of immanence, it is of course evacuated of Spinoza reliance upon onto-theology (or at least the theological work being done by the great Prince's equation of God and Nature). But of course, we have

⁴ While Deleuze cites Boltzman's critiques of an initial state to infer later states as Kantian, he also collapses a rationalist notion of science with Hegel's rationalist monism which seems an odd pairing given the topic of the physical sciences. In other words it is not clear whether Deleuze is taking issue with a fundamental rationalism or a technical rationalism that uncritically retrojects a rationalist metaphysics in order to ground 'good sense.'

⁵ It is interesting that Deleuze recognizes, unlike many later commentators on Schelling, that Schelling has more affinities with Leibniz than Schelling especially when it concerns the question of difference and the function of reason.

to ask what comes to take up God's place? It would seem that Deleuze attempts to merely terminate the position rather than fill it by appealing to the productivity of the virtual. Hence what seemed like a deterministic network of causes across modes is now instead an immanent expression of underlying potentiality. But given the special conceptual capacity of the philosopher to attend to these many instances of becoming, the explanatory priority of a generic abstract mind appears to creep back into the abandoned church of all creation (though this is what Deleuze in the lecturers accuses Hegel of doing).⁶

This is not surprising as Deleuze is uninterested in Schelling's notion of ground but follows Hegel and Kant as Schelling's notion of Unground (the 'X' which makes the realm of things in themselves no longer things) upsets the direct (and rather Hegelian) thinkability of the senses.

The complexity of both Deleuze and Schelling's notion of sense requires tomes on their own – and both are sympathetic to some notion of higher empiricism but I would argue that Schelling's emphasis on the looped nature of critical self-consciousness denies any myth of the given whereas Deleuze requires an even more intense form of immediate experience than its traditional empiricist champions (Locke and Hume). But importantly for Schelling self-consciousness and the particularity of the human mind still has to sort and make sense of empirical experience. In fact, as he puts it in *The Grounding of Positive Philosophy*, higher empiricism means treating the realm of experience as material for thought on its own terms rather than saying it is somehow more pure than thought or that it can only be reduced in existential importance by processing it. For Schelling philosophy must come to experience rather than decide beforehand what it can be and mean.

For Deleuze the effect of experience is only ever made explicit through affects, percepts and concepts the latter of which are the trade of philosophical minds. But what I would rather focus on here is the notion of ground as a type of explanation. The hope is that this will clarify how Deleuze and Schelling really differ – in terms of the causal or grounding role of nature and the authority of explanation at the metaphysical level given the place of human thought within a metaphysical system.⁷

But what would be the difference in metaphysical explanation in general between Deleuze and Schelling given both thinkers are, at least in some sense of the term, monists? The biggest difference, as we will see, is that Deleuze's monism rests upon one kind of existence (becoming) which expresses itself in ways graspable by thinking entities (again in terms of perceptions concepts or affects). For Schelling it is a singular precondition (Nature) but leads to an endless bifurcation of interacting and interfering processes which necessitates a methodology to find the place of thinking things made possible by nature.

⁶ See Christian Kerslake 2008.

⁷ In addition, ground (especially as a type of explanation and as connected to monism) has emerged in recent discussions of analytic philosophy by figures such as Kit Fine and Fabrice Correia and Michael della Rocca.

Deleuze and Châtelet

There are therefore families of diagrams of increasingly precise and ambitious allusions, just as there are lines of descent that are increasingly autonomous and concrete, and, just as the technical object does not follow knowledge, so the diagram does not simply illustrate or translate an already available content. The diagrams are therefore concerned with experience and reveal themselves capable of appropriating and conveying 'all this talking with the hands' (which it would perhaps be better to call this talking in the hands) of which physicists are so proud and which they naturally reserve for the initiates. A philosophy of the physico-mathematical cannot ignore this symbolic practice which is prior to formalism, this practice of condensation and amplification of the intuition.

Châtelet, *Figuring space*, 10-11

Following from the emphasis of nature as a monist notion of continuity (but that is not reducible to only a simplistic mechanical causality) Châtelet's thought can be viewed as a reactivation of the *naturphilosophical-french connection* especially evident in Schelling's influence in French Spiritualism.⁸ In *The Creative Mind* Bergson downplays this connection, especially between Schelling and Ravaisson, thereby disconnecting Deleuze's diagrammatology from not only its connection to mathematics and science but also German Philosophy.

In *Post-Continental Philosophy* John Mullarkey highlights the role of the diagram in contemporary philosophy not as indicating the truth but demonstrates the intertwining of thought and world, similar to Merleau-Ponty's notion of perceptual faith (Mullarkey 2006: 159). For Mullarkey, following Laruelle, the diagrammatic is a way to downplay metaphysics, and perhaps minimize ontology, while trying to show how mind and world (without being easily distinguishable) can still 'see' its effects outside of the domain of the singular mind.

This again indexes the difference (though it slightly different terms) between Deleuze and Châtelet. If Deleuze follows Bergson, then the act of drawing the line as also being an act of thought must be a thought of the virtuality of the line that precedes and/or supersedes the act of drawing. For Laruelle (and it seems that Châtelet is closer to him at least in the text on Ravaisson) the act of drawing and the line drawn must be co-present in a way and importantly in a way that is not reducible to phenomenology. Such leanings can be seen in a direct confrontation of Deleuze and Châtelet.

⁸ Daniel Whistler has emphasized this connection while Jeremy Dunham has downplayed this connection.

In his 1978 lectures on Kant and the Synthesis of Time, Deleuze and Châtelet engage in a brief exchange regarding the role of mathematical construction in relation to time. Deleuze invites Châtelet to say something about the mathematical treatment of time in the ancients *vis a vis* Kant's modern concept of time as synthesis. Importantly where Deleuze and Châtelet disagree is in regards to the link between measure and parameter. Châtelet insists that the two are different: "The parameter is not a result. A number, for the Greeks, is simply a measure, here the measure of time is possible because... In mathematics parameter has no definition, it's simply a notion. Time become parameter is no longer a result, it becomes an initial given. A parameter is what is given, what varies" (Châtelet in Deleuze 1978).

Deleuze responds:

I think that it amounts to exactly the same thing: to say that time ceases to be a number or that time ceases to measure something and thus is subordinated to what it measures, and that time becomes a parameter, time is related to a problem of constitution. When I said that time un-curves itself, becomes a straight line... There is something equivalent in this modern conception of time where it is at the same time that an empty form of parametric time appears and a complementarity with something which makes a function, whether it is the caesura in the tragedy, or else the cut in mathematical instrumentation. I am just a bit bothered by the key role that Gilles Châtelet gives to Plotinus. (*Ibid.*)

Châtelet seems to think that Deleuze is conflating a parameter with a result (whereas, as Châtelet says, the parameter is not a result but a certain type of given). In particular Deleuze seems to argue that it is the constitution of the thinker that decides from the form of time will be (something which must ultimately be related to the sensible or at least palpable affects of the becoming of the world. For Châtelet such moves already assume too much about the structure of the world hence why Châtelet discusses one's initial survey of a given field with intuition.

As Châtelet puts it in "On A Little Phrase of Reimman" already in Plotinus one has a notion of a difference between cyclical eternity and of a limited human perspective fixed to one arch of the circle of that eternity. For Châtelet, contra Deleuze, the notion of intuition in Kant does not adequately account for the structure of space but only enforces a distinction of interior and exterior by which our experience can be ordered without appeal to an abstract notion of space or time that could become dogmatically inflated.

For Châtelet only the deployment of thought in the form of formal exhibitions (such as the diagram) will count as proof of its actions whereas for Deleuze the thinker that has come to accept the becoming of the world will be able to pick up on the right traces and affects. One problem that emerges here is in comparing Deleuze's metaphysical ambiguity (pluralism = monism, pure metaphysics, or a metaphysics of sense) to Châtelet's ontological agnosticism.

The stake of the virtual for both thinkers appears split but yet both seem sympathetic to the other.

It may be that the above use of metaphor can be deemed trivial yet, I hope that it at least demonstrates a valiant effort to demonstrate an alliance between two supposedly divided halves of the world: the quantitative and the qualitative. While Châtelet is often discussed as a follower of Deleuze, and is dismissed too quickly as much by Alain Badiou and others, Châtelet's emphasis on metaphor as well as his attitude towards mathematics, carves out an important space between Deleuze and Badiou, and suggests that the mathematical and the vital are not so violently at odds with one another.

In essence, Châtelet argues that the difference between the Greek's notion of time as eternity on the one hand, and a measure of cyclical change on the other, is not radically different from Kant's treatment of space as a necessary (*a priori*) condition for the possibility of experience connected to inner sense. This bothers Deleuze because he thinks one of Kant's great accomplishments is the freeing of time from eternity and becoming a tool of the subject, a constructive aspect of experiential synthesis. Yet it seems Châtelet wants to be more careful when it comes to construction – a line of measure is not an abstract line which, on the one hand, one could argue is somewhat supported by Kant's use of magnitudes as the basis for inner sense's intensity and thus arithmetic. Both measurable and metaphorical captures of intensity productively soften the stitches binding experience to subjectivity.

This in the end may be the difference which Châtelet's metaphors reveal in all their romantic recklessness – that while Châtelet can support Schelling's dictum that being (as nature) precedes thinking, Deleuze's final turn to Fichte betrays the opposite tendency. But beyond a kind of recklessness it also appears to be Châtelet's sympathy to a certain Platonic notion of learning – against a cybernetic or information of the world as something to be pillaged straight forwardly for data. It is with this Schellingian image that Châtelet ends the introduction to *Figuring Space*:

In its ordinary functioning, science seems to limit itself to the gestures that guarantee the preservation of knowledge and leave undisturbed the patrimony of those that set it alight and multiply it. Those are also the ones that save it from indefinite accumulation and stratification, from the childishness of established positivities, from the comfort of the transits of the 'operational' and, finally, from the temptation of allowing itself to be buckled up in a grammar. They illustrate the urgency of an authentic way of conceiving information which would not be committed solely to communication, but would aim at a rational grasp of allusion and of the learning of learning. The latter, of course, would be far removed from the neuronal barbarism which exhausts itself in hunting down the recipient of the thought and in confusing learning with a pillaging of informational booty. Schelling perhaps saw more clearly: he knew that thought was not always encapsulated within the brain, that it could be everywhere ... outside ... in the morning dew. (Châtelet 1999: 14)

Châtelet and Merleau-Ponty

There remains, however, a confused desire to take up again in the flesh with what is perceived as a whole that has been mutilated by technical dispersement, a genuine nostalgia for magical power, exasperated by the incapacity of classical rationalism to get to grips with all these sleights of hand, all these ‘recipes’, all these thought experiments, these figures and diagrams, all these dynasties of problems seemingly capable of the ‘miracle’ of reactivation. This reactivation is ‘informative’ in the proper sense and cannot be reduced to the conveying of a pre-conceived form from one transmitter to another receiver.

Châtelet, *Figuring Space*, 3

Merleau-Ponty writes: “An ontology that avoids mentioning nature shuts itself away in the incorporeal and, for this very reason, offers a fantastical image of mankind, of the mind, of history”. He could have addressed the same warning to all philosophy (and perhaps to all science!) which claims to know only this extended space, always given opposite us, this receptacle containing, willy-nilly, particularities individuated by Descartes and Newton's monstrous origin-point. (Châtelet 1999: 102)

Already in the “touch” we have just found three distinct experiences which subtend one another, three dimensions which overlap but are distinct: a touching of the sleek and of the rough, a touching of the things—a passive sentiment of the body and of its space — and finally a veritable touching of the touch, when my right hand touches my left hand while it is palpating the things, where the “touching subject” passes over to the rank of the touched, descends into the things, such that the touch is formed in the midst of the world and as it were in the things. Between the massive sentiment I have of the sack in which I am enclosed, and the control from without that my hand exercises over my hand, there is as much difference as between the movements of my eyes and the changes they produce in the visible. And as, conversely, every experience of the visible has always been given to me within the context of the movements of the look, the visible spectacle belongs to the touch neither more nor less than do the “tactile qualities”. We must habituate ourselves to think that every visible is cut out in the tangible, every tactile being in some manner promised to visibility, and that there is encroachment, infringement, not only between the touched and the touching, but also between the tangible and the visible, which is encrusted in it, as, conversely, the tangible itself is not a nothingness of visibility, is not without visual existence. (Merleau-Ponty 1968: 133-134)

It may be what ultimately separates Deleuze and Châtelet (read through their engagement with the sciences and especially mathematics) is that Deleuze remains a modern thinker in terms of the constitution of the subject whereas Châtelet remains, as Charles Alunni has said, the last romantic. The act of drawing which is too easily and too readily split between a technical banality and an artistic sensibility, tends to forget the active thought, the thought as motion, in the act of drawing itself. This requires, again to go back to Châtelet's notion of intuition as a sloppy horizon casting, that we can be surprised by our own creations without having to immediately fall head first into the drunken aleatory worship of chance and event. It would also seem that Châtelet grants scientific thought more creativity than Deleuze, there is for Châtelet a deeply creative act in the experiment of the scientist which is not merely understandable as a type of capture in Deleuze's sense.

And again, we encounter the problem with which we started namely that of the passivity of relying upon an experiment to tell us what we are thinking. But rather than worrying about waiting for the event (more in a Deleuzian micro-sense rather than a Badiouian grand sense) we can follow a certain non-human materialist vector (to see the exhibitions of thought as based in other than human qualities or we can see the inhuman materialism of the creation of forms and formalisms as something which is more rational than any one rational actor).

It would seem that Châtelet wants to find a space between these choices and is one connected to an expanded sense of naturalism if the diagram carries with it its own history of a gesture and thus is freighted with artifacts of bodily movement. This is another way of thinking what Merleau-Ponty means above about the imbrication of the tactile and the palpable. Whereas for Bergson (and arguably Deleuze) the virtuality of the line is not fully or appropriately actualizable, for Châtelet and Merleau-Ponty the assignment of a non-actual capacity is necessary to put seemingly disparate quarters of the world into contact rather than make them meaningful in some humanist sense.

One could invoke Piaget here (who in turn was building off of the work of some of the same retoolings of mathematics as Châtelet) when he writes:

when we are acting upon an object, we can also take into account the action itself, or operation if you will, since the transformation can be carried out mentally. In this hypothesis the abstraction is drawn not from the object that is acted upon, but from the action itself. It seems to me that this is the basis of logical and mathematical abstraction.
(Piaget 1968)

Again looking at Merleau-Ponty's rumination on the movements of the eye, we can easily imagine how the creation of an object of the actions of sight would involve not that which is seen in a corresponding representation but it would mean to also see the action of the eye in seeing the horizon before it. Just as the gesture does not simply refer to the objects before the sweep of the hand or the cock of the head, it is rather than a net is cast where the

ambiguity of the relations between what is gestured at or towards or not weakened by such a casual motion of localized in the context of bodily action.

The ontographic (or the graphocentric as Roberty Guay once puts it in “Schelling and Graphocentrism”) is one means of articulating the transcendental (as a certain irreducibility of a point of view or perspective even in a maximally naturalized world) as the trajectory of a particular active force in the world. To extricate the possibility of such a force from all forms of mechanical forms of causation would be absurd but it would be equally absurd to reduce the emergent particularities of such action (across time and space) to such mechanism. Hence why the notion of ground is non-trivial nor is it a content-laden metaphysical concept central to diagrammatic thought.

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