DOCTORAL THESIS

The Noise of the Oppressed

Young, Reynaldo

Award date:
2021

Awarding institution:
University of Roehampton

The Noise of the Oppressed

Reynaldo Young, MMus

A thesis submitted in partial fulfilment of the requirements for the degree of PhD

Department of Humanities

University of Roehampton

2019

Abstract

This thesis proposes and explores a fundamental interrelation between philosophy, education and noise. A speculative bridge is constructed between Alain Badiou's philosophy and Paulo Freire's pedagogy, whereby noise is posited as the *phenomenological* (temporal) appearance of Badiou's *ontological* (atemporal) notion of 'the void'. Such temporalisation of the void drives the key conjecture of the argument: if, for Baidou, philosophy is the opening of a *space* for the *compossible thinking* of political, artistic, scientific and amorous truths, I propose therefrom that education is the caring of the *time* produced *in praxis* by the subjects engaged in the investigations of such truths. It is within such pedagogical temporality, then, that noise emerges as the (neg)entropic, phenomenological trace of the isentropic, ontological void. Education intervenes amidst the noise as a reassuring injunction to *keep going* regardless of the anxiety which will inevitably assault the subjects throughout their uncertain inquiry. Given that the subjective trajectory purely follows the consequences of an undecidable event, this pedagogical relation subtracts itself from all established laws. I claim that such an "education *in* noise" is inherently Freirean insomuch as it constitutes a fundamental site of resistance to the oppression of constituted power. Noise is immanently subversive inasmuch as it enkindles *innen*- and *um*-subjects that are completely indigestible to the status quo of the state. This indigestibility represents the *subtractive* face of noise (on the side of an ontology woven on the void): noise, however, is also immanently *relational* (on the side of the inter-subjective production of a new logic). I conclude that by being ontologically subtractive *and* logically relational an education *in* noise manages to remain *both* subversive (insofar as it subtracts itself from all established knowledge) *and* critico-pedagogical (insofar as it involves the dialogical, collective construction of a new world).

Contents

Abbreviations

works by Alain Badiou

BE	*Being and Event*
E	*Ethics: An essay on the understanding of evil*
HI	*Handbook of Inaesthetics*
LW	*Logics of Worlds*
M	*Metapolitics*
MP	*Manifesto for Philosophy*
TS	*Theory of the Subject*
TW	*Theoretical Writings*

works by Paulo Freire

CAF	*Cultural Action for Freedom*
PF	*Pedagogy of Freedom*
PH	*Pedagogy of the Heart*
PO	*Pedagogia do Oprimido*
POe	*Pedagogy of the Oppressed (English translation)*

by Cécile Malaspina

EN	*An Epistemology of Noise*

Preface: The Noise of the Oppressed vis-à-vis Badiou's Philosophy

Event, truth, subject, education, noise—such are some of the main theoretical threads interweaved throughout this thesis. These purely speculative themes represent a collection of conceptual artifacts gathered by a thinking which has been ignited, and is constantly refuelled, by an artistic and pedagogical practice. In other words, what follows is a discursive elaboration reflecting on a particular mode of *making* and *doing*, which in my case happens to be that of a composer, performer and teacher.

Although I am by no means the only "classically trained" musician with a declared commitment to (what is sometimes regarded as) the lesser practices of free-improvisation, experimental noise and so-called "community music", examples of such trespassings in this field do not abound: in the terrain of music, like in every other (artistic, scientific, academic) domain, borders are drawn, specialisations are actualised, and deterritorialisation is foreclosed.[1]

One of my main activities for the past fifteen years has been to direct an experimental music group I founded in 2003, the *cardboard citizens new music ensemble* (ccnme), members of which are all homeless people, asylum seekers and refugees (it is a project that exists under the organisational umbrella of the *Cardboard Citizens* theatre company, main practitioner of the Theatre of the Oppressed (TO) techniques in the UK; I have been, since 2004, acting as the Musical Director in most of the company's performances. Gradually, a repertoire of music-making techniques devised for collective group improvisation (warmups, exercises, compositions and the like) developed through years

---

1 A preeminent example of a classically trained composer with a masterful grasp of both improvisation and community music practices would be Daryl Runswick, whom I have the privilege of calling my teacher.

of practice. This technical arsenal finally individuated in an artistic, pedagogical and militant framework which I named *the Noise of the Oppressed* (NO).

The choice of such a slightly grandiose name, with its conspicuous pointer to Paulo Freire's *Pedagogy of the Oppressed* (PO) and Augusto Boal's *Theatre of the Oppressed* (TO), seems to pretentiously place NO as a descendant of one of the greatest pedagogico-artistic genealogies of the twentieth century. Even considering the fact that NO was indeed conceived, born and developed within the real of TO practice, it would seem like an overambitious gesture, and hence one that begs a short explanation.

The historical link between TO and PO is a well documented fact which today, almost three quarters of a century of perspective makes appear as something like a logical development. If Boal explicitly acknowledged his intellectual—or even spiritual—debt to Freire, whom he referred to as 'my father',[2] the connections between TO and PO were as structural as they were institutional, right from the start of their joint pioneering work at the *Movimiento de Cultura Popular*[3] in the Recife of the early sixties. That the activities of TO had been historically encased within Freire's PO framework is something which Boal was always careful to point out, in particular when clarifying the differences between TO and 'the counterculture' of the time.[4] And that connection remained unchanged for the rest of the century, even as PO and TO each became in their own right the worldwide seismic movements we know of today.

---

2 See Augusto Boal, *Legislative Theatre: Using Performance to Make Politics*, trans. by Adrian Jackson (London and New York: Routledge, 1998), p. 126.

3 A public body set up by the local government of Recife at the start of the 60s; Freire was its first director.

4 See for example Augusto Boal, *Teatro del Oprimido 1: Teoria y práctica*, trans. by Graciela Schmilchuk (México DF: Nueva Imagen, 1989), pp. 15, 252 and Augusto Boal, *Theatre of the Oppressed*, trans. by Charles A. and Maria-Odilia Leal McBride & Emily Fryer (London: Pluto Press, 2008), p. 96.

For my part, the insolence of claiming accession to such an illustrious lineage is grounded in something I would call the "the banal contingency of work". NO naturally emerged in the rough and tumble of workshops, rehearsals and performances with the *Cardboard Citizens*, a theatre company which just happens to be the chief practitioner of TO techniques in the UK.[5] The *ccnme*, as the resident orchestra of the company, developed an aesthetics and a performance ethics which naturally suited the type of TO practiced by the *Cardboard Citizens*.

That said, it is true that by the start of the 00s there existed, with respect to *musicking* within the TO framework, both a lack and a need to address that lack, as Boal personally confided in me during his last visit to London. Over a long after-dinner conversation in February 2008, he confessed that 'only recently' he had found himself thinking seriously about sound and music and trying to devise ways in which they could be naturally integrated into the system. What he heard and saw of our work with the *ccnme* definitely resonated with his latest concerns on the matter: 'we have to keep talking' was the departing message that cold evening, as we warmly hugged our goodbyes. Sadly, such promising dialogue will always remain for me unfinished by Boal's untimely passing the following year.

Having said that, the practice I developed within *Cardboard Citizens* did not emerge as an answer to Boal's questions regarding the configuration of a befitting 'music of the oppressed', neither is NO a translation of TO techniques into the musical world—and it goes without saying that it never pretended to even approximate the universal beauty and importance of either PO or TO: my work only haphazardly found itself at a particular juncture which just happened to be part of a noble path of

---

5 Its founder and Artistic Director, Adrian Jackson is not only the English translator of most of Boal's work: Boal considered Jackson as an adoptive son.

unimagined historical significance.

This does not necessarily imply that this doctoral project falls into the category of practice-based research: what follows is intended to be read as a purely theoretical work. However, the trace of such practice will have remained and will somehow be ever-present as background noise, as a leftover radiation murmuring throughout the theoretical journey.

Ultimately, what this in fact describes is nothing more than what Alain Badiou refers to as the 'conditioning' of philosophy: as it will be duly discussed in the following chapters, for Badiou, philosophical thought cannot exist in a state of self-enclosure: thought needs to open up and let itself be affected—or even violated—from the outside. Such fundamental concept of his work (which resonates with the Freirean notion of praxis as the dialectics of reflection and action) is something which makes his philosophical *káthedrā* feel like home for a project such as mine.

To sum up: in this thesis, Paulo Freire names both a praxis and a heritage, Alain Badiou represents both an encounter with a philosophical system and the decision to incorporate the conceptual tools obtained therein. Noise will have been the result of using those tools in the construction of a bridge between a Freirean praxis and a Badiouian mode of thought. And, like every bridge, the Badiou-Freire bridge needs to be *itself* immanently noisy, if it is to be structurally sound.

0. Introduction

0.1. Badiou, Freire, Noise

This thesis is interwoven with three thematic threads, delineating something like a trio of tonal centres around which the whole argument is structured: (i) there is a *philosophical framework*, founded in Alain Badiou's ontological, logical and ethical categories; (ii) there is an *educational argument*, following the critical, emancipatory praxis of Paulo Freire; (iii) there is the subject of *noise*, as the connective or relational element, inevitably appearing in the gap between (i) and (ii).

An overarching hypothesis braiding the three strands posits that (1) by deploying the main categories of Badiou's conceptual system (being, event, truth, subject, the void), and (2) as long as these concepts are adequately re-tuned to a theory of noise which posits the latter as the condition of possibility for the creation of new knowledge (and, hence, of subject construction), then (3) it will be possible to extract the essence (or, at the very least, *an* essence) of Paulo Freire's thought, enabling a modern reconfiguration of a Pedagogy of the Oppressed which, weaved around the notion of humanisation-as-subjective process conditioned by language, will, in effect, (4) embody, as pedagogical praxis, Badiou's postulate that 'the only education is an education *by* truths'.[1]

The first theme, composed by motifs drawn mostly from Badiou's conceptual repertoire, will provide the philosophical grounding of the argument—its fundamental tone, as it were. Indeed, a specifically Badiouian notion of *being*, *event*, *truth* and *subject* will

---

1 Alain Badiou, *Handbook of Inaesthetics*, trans. Alberto Toscano (Stanford: Stanford University Press, 2005) p. 14; hereinafter HI.

determine something like the resonant spectrum of the whole essay, shaping the natural frequencies of its theoretical body and thus setting what could be described as the *eigenconcepts* of its entire speculative field.[2]

Being, *truth* and *subject* name, for Badiou, 'the constitutive triad of modern philosophy',[3] and itself comprises 'the fundamental core of [his] philosophical doctrine'.[4] This central nucleus originates in a set of founding axioms with interweaving consequences. 'Being', in Badiou's philosophical topology is a concept which forms a Borromean knot with both 'truth' and 'subject', each holding the sense of the other two. All in all, the knot *being-truth-subject* itself binds together a complex neighbourhood implicating other notions such as *event*, *void*, *multiplicity*, and *the generic*. The planned itinerary of this research will require the argument to visit and revisit this entangled topology—I will begin to unfold it here on the understanding that its manifold reverberations will be further reflected upon at various other points throughout the journey:

- *being* is multiple and infinite and there is no One; the latter is a mere after-effect of a 'counting-for-one' operated by thought (with the aid, one must presume, of language).

- this multiple being is weaved around a notion of inconsistency, or nothingness, which Badiou—borrowing from mathematical set-theory—refers to as *the void*;

---

2 The natural frequency of a system (sometimes referred to as its eigenfrequency) is the frequency at which it will naturally oscillate without any external intervention from either damping or driving forces. It is referred to as *fréquence propre* in French and *Eigenfrequenz* in German (literally 'own frequency' in English). In linear algebra, an eigenvector is a vector whose direction will remain unchanged after a linear transformation. By *eigenconcept*, then, I mean concepts for which the direction of the sum-vector of their ontological, phenomenological, ethical and epistemological dimensions, will have remained unchanged throughout the various transformations, translations, transductions and—to borrow an important term from Ray Brassier—schizductions that the itinerary of the argument will force upon on them.

3 Alain Badiou, *Manifesto for Philosophy*, trans. & ed. by Norman Madarasz (Albany: State University of New York Press, 1999), p. 108; hereinafter MP.

4 Alain Badiou, *Theoretical Writings*, ed. & trans. by Ray Brassier & Alberto Toscano (London & New York: Continuum, 2004) p. xiv; hereinafter TW.

every situation is structured around this void which always already exceeds the count-for-one, haunting the situation.[5]

- an *event* is an unpredictable irruption of the void (something like a miscount, random as it is inevitable).

- events only occur in the realms of *art*, *science*, *politics* and *love* (hence, events belong in history and never in nature).

- a *subject* is induced following an encounter with an event, by declaring its occurrence and by investigating its consequences (hence, subjects are not given, they are rare, induced, borne out of a 'fidelity' to the event)

- the subject, by naming the event and affirming its consequences in the situation, (locally) processes a new *truth* (truths are local, *for* the situation, but infinite and universal in its implications).

True to its grand philosophical narrative, Badiou's foundational notions are grounded on ontological decisions which establish what it is meant for something to *be*, and all at once delimiting that which is *an exception*, or a *supplement* to such be-*ing*. Subsequently, by demonstrating how these supplements might eventually *come to be*, Badiou prescribes a *logic* by which all existing things will differently *appear* in the world and of the ensuing *relations* emerging therefrom. Ultimately, this onto-phenomeno-logical aggregate will finally induce the singular *ethical* field in which every political, artistic and scientific praxis, as well as the whole desiring interiority of the human subject, is to be thought.

And it is precisely this ethical sum-vector which, I contend, should be the exclusive, unmitigated concern of *education* and its sine-qua-non determinant. In other

---

5 Alain Badiou, *Being and Event*, trans. by Oliver Feltham (London & New York: Continuum, 2005), p. 94; hereinafter BE.

words, I hold that choices made regarding ontology and its limits (*including* its exceptions, or cracks), will have determined the resonant mode of a philosophical discourse, *together with* an educational praxis implicit therein. Hence, the full range of political, artistic, scientific and erotic overtones present in the ethical spectrum of a statement such as 'the only education is an education *by* truths', will only resonate within the ontological vector-field that originated it. As it will become clear, however, for Badiou ethics proper is an injunction hailing, not from ontology, but from a rupture, or an exception of ontology—i.e. an event.

As the argument modulates to the second theme—education and critical pedagogy— Badiou's conceptual arsenal will be carried across the border, deep into Freirean territory in order to perform there what will have been to all intents and purposes a Badiouian reconfiguration of Freire's educational theory.[6] It is at this stage that the philosophical toolbox borrowed from Badiou's attic will have to prove its worth, insofar as the conceptual 'tools and sharpened knives'[7] found in it will be expected to withtake the translations that the crossing of such epistemological border requires (in order to retain consistency in the new territory)—and this without losing, at one and the same time, their original puissance (in order to perform the required recompositional task). Simply put, Badiou's concepts will need to keep their essential functionality within the Freirean domain and, simultaneously, Freire's notions should remain readable under the Badiouian instruments.

This speculative situation only obtains provided that, on the one hand, Freire's

---

6 An operation which, one must duly note, is in full consistency with Freire's expressed desire that his work be constantly reinvented; see: 'Paulo Freire: "Eu quero ser reinventado"', *Psicologia Atual* 3:13 (1980), pp. 14-17; quoted in Moacir Gadotti, *Paulo Freire: uma biobibliografia* (São Paulo: Cortez Editora & Instituto Paulo Freire, 1996), p. 298.

7 'Philosophy is like the attic where, in difficult times, one accumulates resources, lines up tools and sharpens knives' (Alain Badiou, *Polemics*, trans. by Steve Corcoran (London & New York: Verso, 2006), p. 35).

thought proves to be philosophically robust enough to accept the conceptual transplant and that, on the other hand, there are already present in Badiou's philosophy at least some pedagogical elements compatible with the recipient body. Put differently, should the Badiouian/Freirean philosophico-pedagogical framework proposed here prove to be consistent, this will have been due to the fact that Badiou foregrounds the fundamentally *philosophical* tone in Freire *and*, concurrently, the latter emphasises the *pedagogical* overtones in the former, effecting something like a mutually reinforced reverberation, a double resonance which, arguably, can only happen as long as there is some set of common conceptual harmonics already present in their respective work.

More fundamentally, however, I ascertain that such Badiouian/Freirean resonance uncovers a deeper correlation, one which underscores the pivotal assumption pulsating at the heart of my pedagogical argument: namely, the material equivalence between philosophy and education. By positing this biconditionality (viz., philosophy <=> education) I am making explicit an essence of Freire's thought, which is as implicit in his writing as it is overlooked by his commentators: the fact that Freire considered all pedagogical practice as inseparable from a philosophical standpoint is a key aspect of his work and, from my perspective, what makes his name a singularity.

On the whole, and most crucially, it is a position bearing the main conjecture of this thesis: namely, that education is none other than the caring of the *praxial*[8] *temporality* produced by the subjects of truth: as such, education is the *time* produced within the *place* opened up by the philosophical notion of Truth. And inhering in the validity of

---

[8] I am importing the term 'praxial' from the field of philosophy of music education, where it is commonly used; first coined in 1991 by Philip Alperson, it was then extensively applied by David Elliott, who is now associated with the term. Obviously deriving from "praxis", oddly enough, the name of Paulo Freire is rarely mentioned in the field as a source. See Philip Alperson, 'What Should One Expect from a Philosophy of Music Education?, *The Journal of Aesthetic Education* 25:3 (Autumn, 1991), pp. 215-42 and David Elliott & Marissa Silverman, *Music Matters: A Philosophy of Music Education*, 2nd edn (Oxford: Oxford University Press, 2015). see also Constantijn Koopman, 'Music Education: Aesthetic or "Praxial"?', *The Journal of Aesthetic Education* 32:3 (Autumn, 1998), pp. 1-17 and James Vincent Maiello, 'Towards a Praxial Philosophy of Music History Pedagogy', *Journal of Music History Pedagogy* 4:1 (2013), pp. 71-108.

this conjecture is the key translation operating in this thesis: Badiou's conception of the void as *noise*—a translation which implies a *temporalisation* of the otherwise atemporal void:

(biconditionality):	*philosophy*	<=>	*education*
(scission):	*place* of Truth	<−|−>	*time* of the Subject
(translation):	*the void*	—>	*noise*

This move is authorised, I claim, within both the Freirean and the Badiouian philosophical configurations: on Freire's side, we will find that education is a process that 'permanently "bathes itself" in temporality', in an always-unfinished *becoming human* that—true to its sworn Bergsonism—*temporalises* space.[9] For Badiou's part, '[t]he production of a truth is the same thing as the subjective production of a present':[10] in other words, as Olivia Lucca Fraser duly puts it, the whole subjective procedure amounts to a 'temporal unfolding of a truth',[11] and, hence, it implies a necessary movement out of the a-temporal realm of ontology into the (neg)entropic world of praxis.[12]

The third discursive strand of this thesis emerges as a result of precisely those nonlocal resonances, discords and translations that alternatively connect, separate and displace the two main themes: namely, *noise*. If noise itself eludes a 'formal definition', as Cécile

---

9 See Paulo Freire, *Pedagogia do Oprimido*, 63 edn (Rio de Janeiro & São Paulo: Paz e Terra, 2017), pp. 114; hereinafter PO. The idea of a 'temporalisation of space', even if Bergsonian in its essence, is directly borrowed from Pierre Furter. See Pierre Furter, *Educação e Vida* (Petrópolis, RJ: Vozes, 1966), pp. 26-7 (quoted in PO p. 115).

10 Alain Badiou, *Logics of Worlds*, trans. Alberto Toscano (London & New York: Continuum, 2009), p. 569; hereinafter LW.

11 Olivia Lucca Fraser, 'The Law of The Subject: Alain Badiou, Luitzen Brouwer and The Kripkean Analyses of Forcing and The Heyting Calculus', *Cosmos and History* 2:1-2 (2006), pp. 94-133 (p. 94).

12 I will use the notation *(neg)entropy* whenever I need to refer to the dialectical Two of *negentropy|entropy* itself; i.e. wherever it appears, '(neg)entropy' signifies: *here, in this case, each term always implies the other.*

Malaspina correctly points out,[13] this is due to the fact that its manifold phenomeno-physical dimensions—noise as distortion, noise as static (as parasite), noise as errors interfering with communication, noise as unwanted sound (noise as opposed to music), noise as random fluctuations in a signal, as uncertainty, disorder, noise as random variability between biological cells, as genetic variation, noise as anxiety, turmoil, nausea—cause its signifying chain to escape in a spiral of metonymic displacements and metaphorical condensations which is, itself, a producer of noise. So rather than trying to identify the meaning of noise most suited to the tone of this thesis, or to attempt a synthesis of the various descriptions into something like a "working definition of noise"—which will always fail to capture its protean and elusive nature—the tactic will be to admit the full murmur of noise into the argument, allowing the latter's natural frequencies to resonate as and when, thereby letting its eigenconcepts filter the relevant semantic bands from the proliferating signification that the entire spectrum of noise irradiates.

It might be useful, at this point, to anticipate some of the resonators to which these filters will tend to respond, namely: (1) noise as the result of the *translation* of concepts across epistemological boundaries: this is what Malaspina refers to as 'epistemological noise'; once accepted as the condition of possibility for the creation of new knowledge, its relevance to education is almost self-explanatory; (2) noise as the inevitable background of *dialogue*: as Michel Serres has argued, no dialogue is free from noise; insofar as Freire's pedagogy is founded on a conception of dialogical praxis, this is a crucial notion (and one completely missing in Freirean and post-Freirean literature); (3) noise as internal *anxiety*: insofar as an education by truths involves the subjective

---

13 '[A] shared formal definition of noise is lacking. This lack opens a space for metaphorical reverberation within scientific discourse, and even more so in the straits between the natural and the human sciences, technology and the arts' (Cécile Malaspina, *An Epistemology of Noise: From Information Entropy to Normative Uncertainty* (London: Bloomsbury Academic, 2018), p. 7); hereinafter EN.

breakaway from the security of knowledge, anxiety emerges as the primal affect of the subject of education: this is precisely what I refer to as noise-inside (and what Malaspina identifies as the 'mental state of noise'),[14] the exploration of this noisy *innenwelt* will be guided, mostly, by a Lacanian cartography of the subject; (4) noise as a remainder of *language*, as a left-over radiation from the failed attempt of the symbolic order to fully structure the Real: closely related to (2) and (3), this noise is a constant (and necessary) reminder of the incompleteness of language, foreclosing any attempt to *absolutise* it as some sort of human plenitude, signalling that humanisation, as a process indeed made possible by language is, however, always already 'unfinished'—in Freire's terms—and its ultimate truth should remain 'unnameable'—in Badiou's—; (4) finally, and probably most crucially, noise as the translation/temporalisation of (Badiou's notion of) the *void*: noise becomes something like the phenomenal appearance—inside-time—of the void, which in its original mathematical purity (as the empty- or null-set of mathematical set theory, marked $\varnothing$ and axiomatically posited) remains, always already, outside-time.[15]

The fact that noise persists in its undefinability, constantly escaping a fixed sense,[16] is what makes it the obvious candidate to carry the translated name of the void into the phenomenological and empirical worlds: accepting such translation allows for the thinking of something like a *temporalised void*, or rather, a *temporalised thinking* of the void: in this sense, noise remains empty of sense, still a *nothingness*, still void, albeit now thought from an outlook subjected to temporality, entropy and irreversibility.

---

14 See Malaspina, EN, Part Three: 'The "Mental State of Noise"', pp. 165-218.

15 Olivia Lucca Fraser asserts that within the 'conceptual bestiary of *Being and Event*' there is no stranger creature than the void' and that 'any hope of to extract a clear thought' that could ground it 'finds itself assaulted from the outset by a swarm of equivocations' and therefore, '[a]ttempting to reduce this cacophony into a single, essential concept of the void, or temper it into a soothing harmony, is, I think, unlikely to be either useful or successful.' See Olivia Lucca Fraser, 'Nothingness & Event' (2009) (Unpublished manuscript, <academia.edu> [accss. 20/01/13]).

16 'Noise persists', according to Greg Hainge, 'because it cannot be reconfigured or recontained […] but remains indelibly noise' (Greg Hainge, *Noise Matters: Towards an Ontology of Noise* (New York: Bloomsbury, 2013), p. 23).

0.2. A Hermetic Methodology

Noise here is related too to the question of methodology, insofar as the latter is determined by a regime of translation. These translations will have produced what Malaspina terms 'epistemological noise'. One could thus describe this methodology as the setting and trespassing of boundaries, the combining of the seemingly separate, the splitting of the seemingly inseparable—philosophical fusions and fissions with a sole purpose: the release of conceptual energy, information, noise. As Michel Serres writes,

> [e]ach level of information functions as an unconscious for the global level bordering it, as a closed or relatively isolated system in relationship to which the noise-information couple, when it crosses the edge, is reversed and which the subsequent system decodes or deciphers. In each link of the series the question of language is formulated and reformulated by the transformation of the message, the channel, and the noise: by translation. In fact, *residual background noise is progressively eliminated*: what was supposed to interfere begins constructing; obstacles combine to organize; noise becomes dialect.[17]

It is by invoking a Serresean methodology of translation that the mythical figure of the god Hermes performs a theophany. The divine trickster, and thief-child, but also the carrier of messages and information, layer and trespasser of boundaries, as much the inventor of language as of noise. As Josue Harari and David Bell explain, the themes by which Serres organises his 'anti-method'—by which they mean his conception of science, philosophy and myth—can be arranged 'around one figure: that of Hermes'.[18]

---

17 Michel Serres, *Hermes: Literature, Science, Philosophy*, ed. by Josue V. Harari & David F. Bell (Baltimore & London: The Johns Hopkins University Press, 1982) p. 80 (original italics).

18 'Hermes is considered to be the god of commerce and of theft. He is the god of music and the patron of orators and also the inventor of weights and measures. He is the protector of boundaries and the guide of travelers (his statue could be found at crossroads in antiquity). One of his functions as guide is to lead

Serres himself alluringly illustrates this Hermetic methodology in the following text:

> [v]isit the environment. Traverse circumstances floating like crowns around the instance
> or substance, around the axis of the act. Make use of what is cast aside. Describe the
> parasites in signals, the collective or the living: it is always to be found eating right next
> to you. Study neighbourhoods, travel along country roads which surround and give
> shape to the countryside. Consider the fluctuations, deviations or inclinations, in the
> estimations or concepts of science. Atoms are sometimes cast aside. Do not despise
> conjunctions or passages. Hermes often veers off as he goes along. And detaches
> himself. Observe the mingled flows and the places of exchange and you will understand
> time better. Hermes gradually finds his language and his messages, sounds and music,
> landscapes and paths, knowledge and wisdom. He leaps sideways, to the places where
> the senses murmur and tremble, the neighbouring turbulence of bodies—sensation. He
> loves and knows the spot where place deviates from place and leads to the universe,
> where the latter deviates from the law to invaginate into singularity: circumstance.[19]

With all this in mind, then, it would seem that I will be driving a Badiouian ontological vehicle, guided by a something like a Serresian methodology.[20] If the question immediately begged here is "where does this leave Freire?", I contend that a methodology which follows Michel Serres' thought—one which, in words of Bruno Latour, is 'unbounded by the delineation of territories'—could well be considered a turbocharged form of Freireanism.[21] Freire and Serres are united less by a pedagogical

---

dead souls to Hades. Hermes watches over shepherds, often he is represented carrying a lamb on his shoulders' (Harari, Josue V. & David F. Bell, 'Introduction: Journal a plusieurs voies', in *Hermes: Literature, Science, Philosophy* by Michel Serres (op. cit.), pp. ix-xl (pp. xxx-xxxi)).

19 Michel Serres, *The Five Senses: A Philosophy of Mingled Bodies*, trans. by Margaret Sankey & Peter Cowley (London & New York: Bloomsbury Academic, 2016), p. 287.

20 Despite the fact that the name 'Serres' and the word 'methodology', side by side, seem to spell out an oxymoron.

21 Bruno Latour, 'The Enlightenment without the Critique: A Word on Michel Serres' Philosophy', *Royal Institute of Philosophy Lecture Series* 21 (1987), pp. 83–97 (p. 97). I am not first in noticing the Freire-Serres connection: see Humberto Calloni, 'Paulo Freire e Michel Serres: Aproximações na Perspectiva

stance than by *a systematic use of eclecticism*—what in Freire was described as *antropofagia* and in Serres is a *radical cross-disciplinarity*. Ultimatedly, at it most basal level, both Freire and Serres share a similar epistemological strategy, which could be paradoxically described as a *methodological use of non-methodology*.

All in all, Freire approaches the subject of education wielding a single sharpened tool: humanisation. Insofar as everything in his philosophy is a consequence of this singular operator, one could say that Freire's methodology is, in essence, purely *subtractive* in the strictest Badiouian sense of the term.

Translation, transduction, schizduction

The master-translation in this thesis, the quilting point or axis where all other translations pass through is:

$$void \longrightarrow noise$$

The wager here is that important conceptual worlds could be discovered by using noise as the vehicle for the void. It is in this sense that translation is not just a mere analysis of textual and contextual differentials, nor a sterile game of denotation/connotation combinatorics. Should the translation *void—>noise* be left at that, most of the potential usefulness of it would be wasted. In order for the translation itself to become a producer of concepts, the latter must be extracted from the former's conceptual potential: in other

Interdisciplinar num Diálogo a Múltiplas Vozes', (unpublished PhD thesis, Universidade Federal do Rio Grande do Sul, 2002), Humberto Calloni, 'Diálogos Interdisciplinares Com Paulo Freire E Michel Serres: Contribuições À Educação Ambiental', *Revista Eletrônica do Mestrado em Educação Ambiental* 17 (Jul-Dec 2006) pp. 127-35 and Alex Guilherme, 'Michel Serres' Le Parasite and Martin Buber's I and Thou: Noise in Informal Education Affecting Dialogue Between Communities in Conflict in the Middle East', *Educational Philosophy and Theory* 47:10 (2015) pp. 1052-1068.

words, the translation needs to be put to *work*. A translation is not only a *dynamic* exercise —as it implies, movements, accelerations, collisions: is is also *thermodynamic*, entropic, irreversible process: it carries a capacity to produce noise. And it is this noise that I want to pay attention to when de-, trans- and re-forming Badiou's void into noise. It is, once again, a question of methodology—as Serres alluringly illustrates, '[t]ranslation is both a praxis and a theory; turbulence is a stable and unstable phenomenon where liquid moves and stays in a randomly fixed form; the organism—my body—is now an exchanger of time.'[22]

The emerging question, then, is: once the concept of noise, which begins its signifying journey as something like a temporalised, entropic, resonating void—"resonating" in the broadest possible sense of the term, so it includes things like the Lacanian object-voice, non-cochlear sound and silence—takes conceptual flight on its own, what then, does it *do* in the excess of its metonymical movement?[23]

The operation of this conception of translation could be illustrated with an example: let's take Badiou's concept of the 'edge of the void': translated to the physico-phenomenal domain, I chose the term the 'threshold of Noise' ('threshold' being a term used in acoustics, psychoacoustics, psychophysics, neuroscience, neurophysiology, statistics, etc). The idea of threshold brings with it its sense of liminality, which allows the passage into the subject: here we find, within the articulations of anxiety, invocation and desire, a key Freudo-Lacanian concept: the idea of 'rim', which can be also translated as... "edge" (as indeed Cormac Gallagher does in his translations of the Seminars), carrying, in my view, all the topological implications that Lacan addresses in

---

22 Michel Serres, *The Parasite* (1980), trans. Lawrence R. Schehr (Minneapolis, MN: University of Minnesota Press, 2007).
23 As Lacan affirms, 'desire is always a metonyme'; Jacques Lacan, *Ecrits*, trans. by Bruce Fink in collaboration with Héloïse Fink & Russell Grigg (New York: Norton, 2006), p. 175.

Seminar X (as in the edges of the möbius strip, klein bottle, cross-cap etc). So, we are back (as in a round-trip on a möbius strip) to Badiou's edge of the void—though it now seems infinitely enriched by the paradoxical multidimensionality brought back from the journey: if Badiou, an always astute mathematician, had in mind the *topological* sense of the term 'edge' when naming his 'edge of the void', it is something that he does not make explicit in his ontological account of it in BE.[24] Metamorphosing as the 'threshold of noise', which allowed it to enter the subject as a 'rim phenomenon', which is just another term for a topological rim, the singular power of Badiou's edge of the void, once dithered with its own noise (the result of its metonymic journey), now vibrates in all its newly acquired paradoxical topology.

But, what is more, once the (ontological) void, or rather, its *edge*, appears as the *threshold of noise* (effecting 'a transitory cancellation of the gap between being and being-there'), in this new guise, the void manages to permeate the boundaries of the subject and resonate in the *inside.* And the proper understanding of this resonance, I claim, should begin with, or at least *not* avoid, crucial psychoanalytic conceptualisations: namely, those structures that Lacan termed the *object voice* and the *invocatory drive*.

Transduction:

For all that, it would be more accurate to refer instead—to differentiate—translation from *transduction*, as Malaspina does in her adoption of Gilbert Simondon's own appropriation of the term. 'The transduction of the concept of noise' Malaspina explains 'would imply not only the transformation of one domain, for instance, of information theory, but also the conceptual transduction from one domain to another'.[25]

Transduction is the transformation (or conversion) of one type of energy to

---

24 It is, of course, implicit: 'the void exceeds the always orientated character of natural disposition. It ruins the topology of situations' (BE p. 74).
25 EN p. 94

another (potential to thermal, kinetic to electric, chemical to kinetic, and so on); it also refers to signal transduction, the process whereby chemical and/or physical signals are transmitted at the molecular level inside a cell.[26] Transduction will affirm one of the key aspects of noise: its protean nature.

The banality of emergence: from transduction to shizduction:

Ray Brassier, however, provides a timely warning against a too enthusiastic affirmation of noise as transducer of life, as expressive of an infinite emergence and complexity—all concepts which not only sound with the monotone of nature's chaotic order, but, much worse, are a prime alimentation of capitalism itself.

> There's a temptation to hypostatize capital as though it were an impersonal, wholly autonomous agent subsisting quite independently of the myriad of little human subjects who compose it. This strikes me as a mistake. Here I think a sober appreciation of the mechanical banality of the processes through which capital reproduces itself might obviate this tendency to mystification: this seemingly fantastic, supra-personal complexity is not due to some mysterious self-moving cause or superhuman agent but an effect generated by the myriads of micro-processes that compose it: it is neither more nor less mysterious in its operations than any other complex, multi-layered emergent phenomenon. This kind of emergence and complexity are banal and ubiquitous.
>
> I think there is an important dis-analogy between noise and capitalism in that noise as I understand it is precisely not complex in the way in which capitalism is alleged to be: the sort of emergent complexity exemplified by self-organizing systems is

---

26 It is interesting to note that the earliest notion of signal transduction can be traced back to the work of Claude Bernard in the mid 19th century, on what he called 'internal secretions', later identified as 'hormones' by British physiologist Hernest Starling in 1905. Bernard was first in coining the term *milieu intérieur*, a concept crucial in the work of not only Simondon (usually appearing as 'associated milieu') but of Norbert Wiener's development of cybernetics, negative feedback and self-regulating systems. See Claude Bernard, *An Introduction to the Study of Experimental Medicine* (New York: Dover Publications, 1957). On the influence of Bernard on Wiener, see: Charles G. Gross, 'Claude Bernard and the constancy of the internal environment', *Neuroscientist* 4:5 (1998), pp. 380–385.

relatively uninteresting. The fetishizing of complexity in the sense of self-organization, along with emergence and irreducibility, etc., is part and parcel of the neo-vitalist tendency to prefer mystification to explanation, so prevalent today. What I consider to be interesting about noise is its dis-organizing potency: the incompressibility of a signal interfering with the redundancy in the structure of the receiver. Not transduction but schizduction: noise scrambles the capacity for self-organization.[27]

A noise interfering with the redundant structure of the receiver: it is precisely this schizductive noise, Hermetic and relational, which filters into the subject and out again, that best approximates the noise we are following—*the noise of the oppressed*.

0.3. Structure

The text is divided in three parts.

Part I, comprising the presentation of the two main themes—Badiou and Freire—is subdivided into two chapters. The motifs presented in Chapter 1 are subsumed under a single all-encompassing argumentative strategy, namely the unpacking of Badiou's singular pedagogical statement: 'the only education is an education *by* truths'. Decodifying this dense statement requires a full understanding of what Badiou exactly means by 'truth' (and insofar as '[e]very truth originates in an event',[28] this latter notion—which is an irruption of the 'void', itself the 'proper name of being'—needs[29], as well, proper elucidation, not to mention an understanding of what is it meant to be 'a subject to truth' and so on). And this, in turn, requires an understanding what it is to become a 'subject to truth', together with the connection

---

27 Ray Brassier (interviewed by Bram Ieven), 'Against an Aesthetics of Noise', nY # 2 (2009) <http://www.ny-web.be/transitzone/against-aesthetics-noise.html>[accss. 17 Jan. 2019].
28 Badiou, HI p.11.
29 See Badiou, BE, 'Meditation Four—The Void: Proper name of being', pp. 52-9.

between truth and 'event', and the latter's relation with a notion of the void—a notion which, crucially, not only is at the centre of Badiou's conception of *being*, but will have become the inaugural translation operating throughout this thesis: void —> noise.

Chapter 2, expanding on the notion of critical education and in line with Freire's desire that his ideas be constantly reinvented, will attempt a reconfiguration of his thought utilising the Badiouian concepts smuggled through the border. The notions of truth, event, subject and void will now become operative in a reconfigured notion of the Pedagogy of the Oppressed. I will argue that Freire's is less a compendium of pedagogical methodologies than a philosophical system in its own right. The backbone of the argument will rest on the following assumption: Freire's system can be considered as a *generic* fidelity to the event of humanisation. I will here develop the key conjecture of the whole thesis: that education is the praxial-temporal side of philosophy.

A *Bridge* intends to both gather the previous ideas discussed in Chapters 1 and 2, pointing out how noise relates to the two previous themes. It will also anticipate some of the issues to be discussed in part II.

Part II can be considered a developmental section, wherein I will observe in more detail the concept of noise, both in its empirical exteriority and its subjective interiority. Chapter 4 will discuss notions of what Malaspina terms 'empirical noise'—and I will here refer to as noise-outside—briefly overviewing its various linguistic, physical and artistic manifestations. It will include a discussion of the mathematical formalisation of noise performed by Claude Shannon: the position here is that if we accept the validity of the Badiouian equation *mathematics=ontology*, then Shannon's information theory is a framework that presents what is, in all but name, a pure ontology of noise.

Chapter 5 will direct the argument through yet another border-crossing, into the interiority of the subject: the domain of what I term noise-inside, akin to Malaspina's 'mental state of noise'. If Malaspina's exploration of internal noise is conditioned by the cognitive psychiatry of Steven Sands and John Ratey,[30] I will here follow psychoanalytic routes, mostly those drawn by Lacan. The motivation for embarking in such journey inside the subject, however, seems to me to be exactly the same: insofar as noise trespasses the *umwelt-innenwelt* border, any account of it that does not consider this subjective interiority, will be incomplete.

In *Part III* I will attempt to relate the two main themes in what could be seen as a non-dialectic recapitulation. I will revisit the two notions which will have proven to be most problematic for the Badiouian-Freirean composition attempted throughout this thesis: viz., language and humanisation.

As a conclusive thought, I will propose that the notion of an "education *in* noise" such as the one elaborated throughout this thesis, will have redeemed a sense of *relationality* which seems to be inconsistent with Badiou's subtractive position. If Badiou eschews every relation at the ontological level (except, that is, that of *belonging to a set*), I claim that by making education and philosophy mutually inclusive, and by temporalising the ontological void through its translation into (phenomeno- and epistemo-logical) noise, then such non-relational fault can be repaired—and this *without* the need to sacrifice the necessary subtraction that every pursue of truth requires. Simply put, I will posit that an "education *in* noise" (my mere translation of Badiou's 'education *by* truths') is the philosophical term for *relation*.

---

30 Malaspina, EN pp. 165-218; see also Steven Sands & John J. Ratey, 'The Concept of Noise', *Psychiatry* 49:4 (1986), pp. 290–97.

A reflection on form, in the margins

Insofar as this thesis presents two main themes (Badiou, Freire, in part I), a development (noise, in part II), and a recapitulation of the two main themes (part III), a reader with some knowledge in musical matters might be lead to suspect the familiar tripartite presence of a Sonata form (viz., *exposition*, *development*, *recapitulation*) emerging herein in the text:

part I	part II	part III
exposition	*development*	*recapitulation*
theme A theme B	transition, retransition	theme A theme B (=key)
Badiou Freire	noise	Badiou<—>Freire (relation)

This might be so. However, one could also add that this is simply another case wherein contingent emergencies happen to coincide at the level of formalisation. A mere coincidence evidencing that pattern is no more than a (neg)entropic device—and that the Sonata form, just like any other pattern formation, is merely a subjective case of *Kunstformen der Natur*. From this perspective, form becomes simply the random outcome of an urge to reach out, amidst the hazard of entropy, towards anything carrying the promise of atemporality. The imperative to communicate something infinite and universal, within the ever-present void of sense. Differently put: form is the result of a semantic pact between dialoguing subjects who, amidst the impossibly opaque inconsistency of noise, insist in collaboratively mapping a navigable pass through it. A passage which, eventually, hopefully, could lead them both to the encounter of some truth.

All of which could be a faithful description of education, in its most generic sense.

Part I

1. Badiou: The philosophical framework and its eigenresonances

2. Freire: Philosophy <=> Education

1. Badiou: The Philosophical Framework and its Eigenresonances

1.0. Intro: Being, Truth, Subject

As noted above, if Badiou's assertion that 'the only education is an education *by* truths' is to be properly evaluated, it has to be unpacked within the conceptual field that originated it. More fundamentally, *being* and its relation to the *void*, *truth* and its dependance on an *event*, together with the emergence of a *subject* of such truth, are all concepts requiring proper elucidation if one is to properly understand what exactly does Badiou mean by an 'education *by* truths'. It is with this in mind that I will now review some of the key ontological concepts of the Badiouian system, briefly underscoring their relevance to my overall argument.

Badiou founds his whole philosophical enterprise on the pairing of *truth* and *subjec*t and places at the core of this pairing the thinking of *being-qua-being*: 'starting from an ontology whose paradigm is mathematical', Badiou explains, 'I am able to propose a new vision of what a truth is, along with a new vision of what it is to be the subject of such a truth.'[2] Essentially—and as introduced earlier—Badiou's ontological starting decisions prescribe that:

(1) Being-qua-being *is weaved around a notion of inconsistency which Badiou—borrowing from mathematical set-theory—refers to as the* void.

Being, for Badiou, is multiple and infinite and there is no One; the latter is a mere

---

1 Sun Ra (New York: ESP-Disk ESP1054, 1966)
2 Badiou, TW p. xiv.

after-effect of a counting-as-one operated by thought (with the aid, one must presume, of language). This *always already there* operation of the count-as-one—akin to that of Lacan's Symbolic order—will have insured that there is always already something like one-*ness* presented to thought: 'the one is not. It is not a question, however, of abandoning the principle Lacan assigned to the symbolic; that *there is* Oneness'.[3]

In a radically subtractive philosophical move, Badiou delegates *all* ontological thinking to mathematics—specifically, to mathematical set theory: for Badiou, everything that *is* is multiple, the One *is not* and therefore the thinking of being-qua-being must equal the thinking of pure, infinite multiplicity—which is, precisely, the metier of set theory (as pioneered by Georg Cantor in the 1870s and later axiomatised by Ernst Zermelo and Abraham Fraenkel in the 1920s).

An aspect of this decision, which is of fundamental importance with respect to this thesis, is the foundational place that Badiou—strictly following the consequences of the axioms of set theory—ascribes to the empty set, or *the void*: for Badiou, unified be-ing is the result of the above mentioned count-for-one. This operation renders consistent by counting and re-counting (or 'presenting' and 're-presenting') what is, in essence, uncountable or un-presentable inconsistency: even if wrapped with a semblance of one-ness, the void remains at the core of everything that *is*.

With this account of the void, Badiou somehow contributes his own highly formalised version to a tradition in thought ascribing a central place to the idea that every situation is structured around an inextricable void of structure, an immanent gap between that which can be symbolised and made consistent, and a kernel of unsymbolisable inconsistency which not only subsists and persists but that paradoxically enables the presentation of consistency itself. Jean-Paul Sartre's *nothingness*, Jacques Lacan's *excess of the Real*, Jacques-Alain Miller's *utopic point*, Slavoj Žižek's *symptom*: what

---

3 BE p. 23

all these notions have in common is the positing of a constitutive void that holds everything that is possible in a situation together, insofar as it itself remains impossible within it.

From this perspective, the presented consistency of every situation is a mere result of the count-for-one, which wraps this 'structural impossibility'[4] around a figure of one-ness: the situation thus acquires a semblance of structure. And, furthermore, the count keeps operating by *counting the count* and *re-structuring the already-structured*: such meta-structure, such passage from presentation to re-presentation is what Badiou terms—fully aware of the resonances—the 'state of the situation'. Hence, a situation only knows what it counts 'because the law is the count-as-one, nothing is presented in a situation which is not counted: the situation envelops existence with the one'.[5] The count-for-one wraps consistent unities out of the infinite multiple inconsistency which lies at the bottom of everything. This void, however, always already exceeding the count-as-one, will forever haunt every situation.[6]

(2) *The unpredictable, inevitable irruption of such void in a situation is what Badiou refers to as an* event *(events can only happen in the fields of art, science, politics and love, those realms wherein the generic truth procedures mentioned above operate).*

If Badiou clearly establishes that that which can be thought as being-qua-being is none other than the ontological presentation of set theory, he concurrently allows for the unpredictable irruption of something hailing from the *pure outside* of such ontological situation. Such exception to the regime of being is what Badiou calls an *event*: the fleeting, hazardous emergence of that which, from the established point of view of a

---

4 Every ideological 'symbolic field' Slavoj Žižek writes, 'contains such a filler holding the place of some structural impossibility, while simultaneously disavowing this impossibility'; Slavoj Žižek, *The Plague of Fantasies*, (London & New York, Verso, 2008) p. 98.
5 BE p. 52.
6 BE p. 94.

status quo prescribed by the state of the situation, counts as nothing—such is, precisely, the void of the situation discussed above.

Badiou invariably refers to the event as being 'random', and probably rightly so—however, there is also altogether an element of inevitability about its occurrence. Indeed, if everything that *is*, is so because it has been counted as one, it follows that the counting-for-one *must itself be counted*—and it is right there that a fundamental impasse of ontology emerges. And, as it happens, this recursive count-of-the-count—like every self-referent loop—will always already be in excess of itself. And crucially, this excess carries with it an ontological fissure, wherein paradox, reflexivity and self-belonging, albeit axiomatically foreclosed from ontology, will inevitably return. And, what is more, as the latest work of Noam Chomsky has shown, recursion is exactly the mechanism rendering language and symbolic thought possible—hence the incompleteness of language, hence its inability to fully grasp the Real, hence *anxiety*. The void, language, anxiety, *noise*: all these notions are infected with the paradox of self-belonging, of which the event is its vanishing, random and inevitable manifestation.

What the event fleetingly disrobes, then, is the unseen, the unheard, the uncounted, leftover elements that every structured situation always already excretes. It is the transient appearance of the inconsistency which, precisely because it exceeds every attempt to make it consist, cannot ever be properly foreclosed—it is the Real of a situation, its always-returning void: its blind spot, what the situation cannot bear to hear. It is the suppuration of the situation's symptom, of what is, in Jacques-Alain Miller's designation, 'the utopic point [*le point utopique*] of the structure, its improper point'.[7] And indeed, the event is 'improper', because its evanescent, phantasmatic appearance evinces the impossible, the illegal: something has, however fleetingly, occupied an *unoccupiable*

---

7 Jacques-Alain Miller, 'Action of the Structure', trans. by Christian Kerslake, rev. by Peter Hallward<http://cahiers.kingston.ac.uk/pdf/cpa9.6.miller.translation.pdf>[accss. 2 Nov 2012]; first published as 'Action de la structure', *Cahiers pour l'Analyse* 9:6 (summer 1968), pp. 93-105 (p. 97).

place,[8] acted out the unseeable, emitted the unhearable. And—the banal fact remains true—a most powerful mark of the unhearable is that, *if* by any chance it is *heard,* it can never become *unheard* again. 'When something truly New emerges', Žižek writes, 'one cannot go on as if it did not happen'.[9]

As mentioned above, the generic procedures which condition philosophy are the exclusive source of truths (these themselves being the sole drive of change). And, for Badiou, 'the existence of a truth is suspended from the occurrence of an event'[10] and are inextricably linked together. What this is implying is that events themselves can only occur within those domains wherein truth procedures are possible: art, science, politics and love. These fields—which, noticeably, are all liable to be effected by something like the agency of *some subject*—are the only ones able to contain an 'evental site' and are termed by Badiou 'historical situations' (wherefrom yet another Badiouian dichotomy emerges: that between 'nature' and 'history'; events can only occur in history, never in nature).

Political revolutions, artistic innovations, scientific breakthroughs, amorous encounters: events in Badiou sense are cataclysmic upheavals with the potential of radically transforming the situation in which they happen.[11] When the event surges, it affects the elements within it and those at its borders, and then the consequences spread like wildfire throughout the containing situation, forcing its re-formation. Examples in

8 See Olivia Lucca Fraser, 'Forcing', *The Badiou Dictionary*, pp. 136-40 (p. 136).

9 And this is so, Žižek continues, 'since the very fact of this innovation changes all the coordinates. After Schoenberg, one cannot continue to write musical pieces in the old Romantic tonal mode; after Kandinsky and Picasso, one cannot paint in the old figurative way; after Kafka and Joyce, one cannot write in the old realist way. More precisely: of course, one can do it, but if one does it, these old forms are no longer the same. They have lost their innocence and now look like a nostalgic fake' (Slavoj Žižek, 'From Purification to Subtraction: Badiou and the Real', *Think Again: Alain Badiou and the Future of Philosophy*, ed. Peter Hallward (London & New York: Continuum, 2004), pp. 165-81 (p. 175)).

10 Badiou, BE p.17

11 This last point is not unimportant: events are located, sited, they happen for a situation which already contains a symptomatic 'evental site' and hence, as Peter Hallward explains, 'an event can always be located precisely in a situation […] [w]e might say that every event is specific to, but not specified by, its site' (Peter Hallward, *Badiou: A Subject to Truth* (Minneapolis: University of Minnesota Press, 2003), p. 117).

Badiou's literature abound, and some are recurring: the French Revolution's destruction of the *Ancien Régime*, Einstein's General Relativity bursting of Newtonian dynamics, Schoenberg's dissolution of the post-Romantic tonal system, the random encounter of would-be lovers that will have changed their lives forever…

All in all, truth and event both name the rare, exceptional emergences of novelty, of that which in-exist according to the terms of the situation for which they happen. As Andrew Gibson explains, an event 'is an aleatory fragment, the chance occurrence of something that had not existed beforehand, could not be predicted or foreseen and has no prior name. The event is the means by which the truth of newness enters the world'.[12] I would qualify Gibson's sentence: the event is what triggers a subject by which the truth of newness enters the world. Truth requires the intervention of a subject.

(3) *For Badiou, a* subject *emerges when, following an unforeseen encounter with an event, they affirm its impossible occurrence and subsequently* (4) *delivers a new (artistic, scientific, political, amatorial)* truth *into the situation by forcing it to accept the consequences of the event.*

Although repeatedly acknowledging his debt to both Descartes and Lacan, Badiou posits a *subject* that is neither a given of the cogito, nor a donation of language, but one that is borne out of an unforeseen encounter with said event and is subsequently induced by the militant work that involves the affirmation of its *truth*. A subject, for Badiou, does not predate the event, but is 'induced through a generic procedure, and therefore depends upon an event. As a result, the subject is rare'.[13]

Being (void, woven out of nothing), the *event* (a surge of the void, as accidental as it is inevitable, random and illegal), and the *subject of truth* triggered by such event: within this

---

12 Andrew Gibson, 'Badiou and Beckett: Actual Infinity, Event, Remainder', *Polygraph* 17 (2005), pp. 175-203 (p.184).
13 C p. 305 n. 12.

thesis, these concepts will inevitably undergo re-tunings and translations as they trespass the various boundaries that the argument will encounter—however, the sum-vector of their ethical directions, which prescribes a thinking of the *truths* produced within artistic, scientific, political and erotico-desiring fields of practice, will have remained unchanged throughout. Insofar as education will be posited here as something like the custodian of the temporal stretch produced by the *subjects* in their investigation of these *truths*, this ethical invariance is a crucial aspect of my argument. To put it differently: I will posit that education, in its most generic sense, is nothing other than the praxial temporality determined by the ethical vectors induced within a philosophical field by its ontological (atemporal) axioms.

1.1. The Truth Procedure: Praxis and the Production of Time

I will now aim to provide the reader with the more general strategic operation of the Badiouian philosophical system, by commenting on three tactical aspects of its functioning engine: firstly, Badiou's conception that philosophy is *conditioned* from the outside; secondly, the related idea that philosophy is not a producer of truths, but rather *a space for their compossibility* and, thirdly, the important *distinction between truth and knowledge*. An overview of these operators will further the presentation of a key strategic notion threading through all three of them—namely, *subtraction*, the concept driving lock, stock and barrel the praxial component of Badiou's philosophical machine, and one which effectively determines every stage of the trajectory of a truth procedure.

Conditions

Philosophy, Badiou claims, needs to open up, and—in a tradition that was inaugurated by Plato—allow its thinking to be *conditioned from the outside*. These conditions are nothing less than those endeavours able to produce the universal *truths* of their time. As we already know, there are four domains of human activity wherein these praxes, which Badiou terms *generic truth procedures*, might emerge: science, art, politics and love.[14] Noticeable in this list is the absence of philosophy itself: as it happens, philosophy does not *produce* any truths of its own: it is *at the service* of the generic truth procedures, facilitating the 'compossibility' of the truths that only the former can produce.[15] Philosophy is empty, or rather: philosophy needs to keep an always-empty place that the truths produced outside of it will have occupied.

Compossibility

For Badiou, then, philosophy offers a 'mode of access' to its contemporaneous truth procedures in a 'temporal arch of simultaneity'; it thus weaves a conceptual space, 'in which thought accedes to time, to its time, so long as the truth procedures of this time find shelter for their compossibility within it'.[16] The notion of 'compossibility', which Badiou borrows from Leibniz, describes an operation taking place *within* a locus that *philosophy alone* opens up and maintains—viz. Truth (singular, with capital *T*). This space is cleared and made available to the truths produced *outside* of philosophy, and this happens through a declaration of the form "there are *truths*" (plural, lower case). The philosophical place of Truth, then, becomes an empty pointer, which—in order for the compossibility of truths to run smoothly—must remain itself void: '[i]t operates but

---

14 According to Badiou, something which Plato himself implied; see Badiou, MP pp. 35-35.

15 See Alain Badiou, *Conditions*, trans. by Steven Corcoran (London & New York: Continuum, 2008) pp. 11, 23, 35; hereinafter C. See also MP pp. 34, 37-8, 123, 135.

16 MP p. 38, p. 134.

presents nothing. Philosophy is not a production of truth, but an operation from truths, an operation which disposes the "there is" and epochal compossibility of truths'.[17] Philosophy is the 'go-between' of the generic procedures, 'the procuress of truth'[18] and, as such, 'readily devotes itself to the arts, to the sciences, to love, to instances of politics, not in order to think their objective nature, or to standardise their practice, but in order to constitute itself as an experimentation of a new concept of truth.'[19]

Truth v knowledge

If Badiou, against the grain of most post-structural philosophy, emphatically takes the position that *there are truths* (a position which will be fully endorsed throughout this thesis), he is also very clear that these truths can never be totalised. Truths, being infinite, are always already unfinished, and can never comprise an encyclopaedic summa, something which would fall on the side of *knowledge*: as with Plato's distinction between philosophy and sophism, and following Lacan, for Badiou, truth punctures a hole in knowledge and is 'heterogeneous' to it—in spite of being its sole source: 'we shall say that a truth forces knowledge'.[20] The latter is the domain of common beliefs and established facts, always already resisting the *change* which invariable follows the disruptive arrival of a new truth. As Peter Hallward writes in the 'Introduction' of his translation of *Ethics*, Badiou's philosophy

> seeks to expose and make sense of the potential for radical innovation (revolution, invention, transfiguration…) in every situation… [dividing] the sphere of human action

17 MP p. 124, see also C. p. 11.
18 HI p. 11.
19 Alain Badiou, *Metapolitics*, trans. Jason Barker (London & New York: Verso, 2005), p. xxxii; hereinafter M.
20 Alain Badiou, *Ethics: An Essay on the Understanding of Evil*, trans. Peter Hallward (London & New York: Verso, 2001), p. 70; hereinafter E.

in two overlapping but sharply differentiated spheres: (a) the 'ordinary' realm of established interests and differences, of approved knowledge… and (b) an exceptional realm of singular innovations or *truths*.[21]

Knowledge, encyclopedia, 'state of the situation' are in Badiou's system all interchangeable notions, on the side of the excess of the law and representation: as A. J. Bartlett explains,

> [t]he re-presentation that the encyclopedia performs as knowledge is thereby characterised by excess; the excess of parts over elements, or representation over presentation, or the rule over the rational. The hole at the heart of knowledge is what the encyclopedia, as pure repetition, exists to conceal.[22]

Philosophy as *conditioned* by 'truth procedures' (art, science, politics and love), philosophy as a space for the *compossibility* of these truths, the incompatibility of the latter with *knowledge*: each of these three philosophical principles—which are somewhat interdependent within Badiou's system—will inflect my pedagogical argument and filter from it a reverberant concept of noise, along the following lines:

(1) Accepting the idea that philosophy is empty, that it does not itself produce any truths, and is conditioned from the outside is a position that not only will have extreme consequences for philosophy itself,[23] it is one that, once taken on board, will radically determine the thinking of education thereof: to put it very briefly, if education is equated with philosophy—a move which, once again, every *properly Freirean* pedagogy should perform—this would imply that *neither philosophy nor education produce any truths* (the

---

21 E, 'Introduction' p. viii
22 A. J. Bartlett, 'Encyclopedia', *Dictionary* pp.108-10 (p. 108).
23 As Justin Clemens has correctly pointed out; see 'Conditions', *The Badiou Dictionary*, ed. by Steven Corcoran (Edinburgh: Edinburgh University Press, 2015), pp. 67-73 (p. 69).

stress should remain on the word *produce*: as we shall see, truths are certainly a main *concern* of education).

By and large, it is here where the pedagogical case of my thesis comes to fruition: education, insofar as it will be posited as the praxial side of philosophy, acts effectively as the minder of the process undertaken by any *subject of truth* whatsoever. If philosophy opens up a shelter for truths, education is the caretaker, the hands-on janitor of such place and the escort of its subjects. In short, I posit that education occupies the temporal interval opened up in philosophy's place of Truth.

(2) The notion of *compossibility* will become pivotal in the next chapter, as it prepares the ground for the conceptual separation I will attempt between "philosophy-as-place-of-Truth" and "education-as-time-of-the-Subject". If '[p]hilosophy is bound to the historicity of its conditions, but seizes the moments of infinity that emerge in them' as Jan Voelker observes, and '[i]t is thus subtracted from time and creates a space of timelessness, in which moments are simultaneously eternal, as they can be regained by thought at any point',[24] it is precisely this act of 'regaining', which imbues the timelessness of the concept of Truth with the praxial temporality of Education.

Furthermore, we can perceive here a first operative resonance with noise: insofar as (i) noise will be considered as the temporalised appearance of the ontological void and (ii) education is posited as the temporal, praxial trajectory of the subjects of truths, then (iii) noise becomes the connective thread: from ontology (the void), through the event (the crack of ontology, the emergence of the void in a situation), to the subjects' work to ascertain the truth of the event (which produces entropy, irreversibility and temporality: the void is, at this stage, manifesting itself flat out as noise).

In this respect, however, one might need to be more specific: what the event

---

24 Jan Voelker, 'Compossibility', *Dictionary*, pp. 66-8 (p. 68

produces is entropy; what the subject's work produces is entropy *and* negentropy, or rather, *the dialectic itself* between entropy|negentropy: viz., *(neg)entropy*. It is in this precise sense that one can consider the event as an irreversible bifurcation, marking a decision, or nomination which forces a temporal beginning thereupon to be filled with the (neg)entropic work of the subject.

Moreover, if 'time' for Badiou 'is intervention itself, thought as the gap between two events'[25] and furthermore, if 'the faithful procedure is random [...] and its texture the operator of faithful connection, which is itself also a temporal production',[26] one might find therein an interesting and purely scientific resonance in Ilya Prigogine's assertion that 'probability appears through bifurcations [and] Time has only meaning in a Probabilistic World.'[27]

(3) As for the irreconcilability between truth and knowledge, we encounter here another clear reverberation produced by noise—in this case, in the resonant overlapping between Badiou's conception of *knowledge* and Claude Shannon's notion of *information entropy*. The fact that knowledge for Badiou 'designates an epistemic state that falls short of truth precisely insofar as it harbours certain yet-to-be-recognised anomalies, paradoxes, aporias, or other such problems',[28] is something that could easily be translated in "theory of information" terms as *knowledge will never fully be able to rid itself of noise and uncertainty*—which is what makes both conceptions sound conspicuously close. Indeed, as we shall see when discussing Malaspina's elaborations on Shannon's mathematical formalisation of information, Badiou's notion of Truth as a supplement to the always-incomplete summa of knowledge, can be re-thought in tandem with

---

25 BE, p. 210.
26 BE, p. 337.
27 Ilya Prigogine, *Is Future Given?* (Singapore: World Scientific, 2003) p. 54.
28 Christopher Norris, 'Fidelity', *Dictionary*, pp. 132-36 (p. 134).

Malaspina's conception of 'epistemic noise'. This is equal to an uncertainty, an 'information entropy' which can be said 'to have a positive epistemic value, if it is understood to specify the uncertainty in which we are about the unfolding of a system' and hence it is 'no longer an entirely negative nor an entirely unspecified form of ignorance' but, much to the contrary, it 'is what specifies complexity and informs on what remains to be known.'[29]

And, sure enough, both notions—viz. Badiou's always-empty space for Truth, Malaspina's always-shifting epistemological borders between noise and information— will have strongly resonated with both Freire's conception of the always already 'unfinishedness' [*inconclução*] of the process humanisation *and* with the always-divided subject of psychoanalysis. The common fidelity in all of these principles is never to 'knowledge' and always to 'what remains to be known'.

Furthermore, Badiou's assertion that education 'has never meant anything but this: to arrange the forms of knowledge in such a way that some truth may come to pierce a hole in them'[30] carries in and of itself an uncanny ring of Freire's own definition of *praxis*, viz., 'reflection and action impacting on the structures to be transformed'.[31]

All in all, the incompatibility between truth and knowledge will remain pivotal throughout the argumentation of this thesis—indeed, as Badiou reminds us, 'everything is at stake in the thought of the truth/knowledge couple.'[32]

Subtraction and the trajectory of a truth procedure

---

29 EN p. 74
30 HI 9
31 [*/R]eflexão e ação incidindo sobre as estruturas a serem transformadas*] (PO 167).
32 BE p. 327; the truth procedure is 'in no way predetermined by knowledge. Its origin is the event, of which knowledge knows nothing [...]. The multiples encountered by the procedure do not depend upon any knowledge. They result from the randomness of the 'militant' trajectory starting out from the event-site.' BE, p. 337.

What each of the three concepts just discussed have in common is the fact that they all accomplish a *subtractive gesture*:[33] first of all, by being conditioned from the outside, philosophy subtracts itself from the production of truths; secondly, compossibility requires that the place of Truth remain empty, subtracted from any substantiation; and finally, it is the case, almost by definition, that every truth is categorically subtracted from knowledge. Indeed, for Badiou, philosophy itself is 'essentially *subtractive*', and this 'because its central category is empty [and] at its core is a lack, a hole'.[34]

In fact, 'subtraction' designates within Badiou's system a complex set of concepts, the 'particular intricacy' of which must be understood, as Frank Ruda explains—in a formulation not too distant from the one I used earlier with respect to noise—'as deriving from its reverberation at all levels of Badiou's thinking'.[35] If it seems reasonable that all of Badiou's 'most crucial categories need to be conceived of in a subtractive way',[36] Badiou's central aim is the radical subtraction of Truth 'from the labyrinth of meaning'[37] (a distinction that, as Ruda points out, is equivalent to that between 'truth and sense, truth and opinion and, first and foremost, between truth and knowledge').[38]

Furthermore, subtraction is the alpha and omega of subjective work, the sine qua non prescription present throughout the subject's investigation of a truth. If subtraction 'reverberates at all levels of Badiou's thinking', it is in the subject-truth procedure that it acquires its ethical dimension in full (which, as we shall shortly see, is a

---

33 The indispensable reference here is Badiou's essay 'On Subtraction', published as chapter 8 in C (pp. 113-28), and chapter 9 in TW (pp. 113-28); c.f. chapter 2, 'Philosophy and Truth', in Alain Badiou, *Infinite Thought: Truth and the Return to Philosophy*, ed & trans. by Oliver Feltham & Justin Clemens (London & New York: Continuum, 2004), pp. 58-78.
34 Badiou, C p. 13.
35 Frank Ruda, 'Subtraction—Undecidable, Indiscernible, Generic, Unnameable', *The Badiou Dictionary*, pp. 329-37 (p. 330).
36 Ibid.
37 Badiou, C p. 13.
38 Ruda, 'Subtraction' p. 330.

dimension invariable underscored by the murmur of noise). As Fraser explains, '[t]he subject, for Badiou, is essentially a free project that originates in an event, and subtracts itself from both being qua being, as well as the linguistic and epistemic apparatuses that govern the situation.'[39] The subjective procedure draws what Badiou describes as the 'trajectory of a truth',[40] an itinerary which could be thusly summarised:

- something improbable to the point of impossible happens—namely, the event;

- upon haphazardly encountering it (or, rather, its *trace*: events are, by their own nature, fleeting occurrences, disappearing as soon as they appear), the subject decides on declaring its occurrence (the event will either be ignored or denied by the state of the situation: from the point of view of the latter's established logic, the former is devoid of value, *undecidable*);

- following the decision to affirm the event, the subject then commits to the investigation of its *indiscernible* consequences in a succession of random enquiries (such trajectory is "indiscernible" and "random" insofar as there is no prior knowledge whatsoever guiding the course of the investigation);

- next, the subject tirelessly militates in order to force the situation to change its logic, so that it accommodates the set of results of the enquiries related to the event: the old logic collapses and a new *truth* is brought into the world (the truth is local and finite in its subjective presentation, universal and infinite in its *generic* implications);

- thus truth passes into knowledge, both remaining completely incommensurable with each other (which implies that the reconfigured knowledge must always reserve a place for the unforeseen arrival of the next truth: such place must be kept empty, *unnamed*).

---

39 Fraser, 'The Law of The Subject', p. 94)
40 C p. 121.

Whence, the four *subtractive* modalities of a subjective itinerary: the *undecidable* (the event), the *indiscernible* (the subject's random path), the *generic* (the always incomplete production of a truth), the *unnameable* (the ethical imperative: *do not substantialise Truth*). Such is the trajectory whereby, in Badiou's own words, 'philosophy seizes truths "out of sense"':

> the undecidable, related to the event (a truth is not, it befalls): the indiscernible, related to liberty (the path of a truth is not constrained, but risky); the generic, related to being (the being of a truth is an infinite set subtracted from every predicate in knowledge); the unnameable, related to the Good (to force the naming of an unnameable breeds disaster).[41]

Two crucial aspects emerge here: firstly, the fact that this subtractive 'trajectory of a truth' is inseparable from a notion of subjective praxis. Indeed, as Ruda observes, 'what holds for truths holds equally for subtraction: as truths are procedures, so subtraction has also to be immanently related to practice'.[42] Insofar as (i) *education cannot be separated from the idea of praxis*—this is one of the key tenets of the Freirean doctrine—and considering that (ii) *education is nothing but the praxial side of philosophy*—this is my claim—then (iii) education is, or *should be*, completely isomorphous with the operations involved in subtraction.

Secondly, subtraction requires an entropic dimension to supplement Badiou's otherwise atemporal, isentropic ontology. Constituting a *trajectory*, the truth procedure involves the activation of a temporality of sorts—in fact, as Fraser appositely points out, '[t]he subjective project is, itself, conceived as *the temporal unfolding of a "truth"*. And indeed,, such temporality activated by a movement *out of ontology*: '[o]riginating in an event and *unfolding in time*, the subject cannot, for Badiou, be adequately understood in

---

41 Badiou, MP, 143.
42 Ruda, 'Subtraction', p. 330.

strictly ontological, i.e. set-theoretical, terms, insofar as *neither the event nor time have any place in classical set theory'.*[43] Which might be the reason why, for Jean-Jacques Lecercle, the event—being an eruption of the (non-temporal) void, has 'no proper duration'. Indeed, insofar as

> [t]he event is situated in the situation, it has a site *in* it, but it is not *of* it, it does not belong, it is supplementary to it. It comes and goes in a flash (it has no proper duration: its temporality is the retroactive temporality of after-the-event; and yet, as we have seen, it interrupts and it founds), but it leaves traces, traces that allow an *encounter* with elements of the situation, who undergo a process of conviction, or conversion.[44]

Therefore, it is precisely here—at the 'temporal unfolding of a truth', which is the subject procedure, determined by the stages of subtraction—the point at which time, (neg)entropy and irreversibility start filtering through and whereupon the void appears, in the emergence of temporality, as *noise*.

Furthermore, and as mentioned above, the work of the subject is *time itself*, which is to say, time is produced as a result of the random, probabilistic, negentropic investigation of the consequences of the entropic event.

In summation, (i) the void surges as an *entropic event*, (ii) the *phenomenological noise* of which triggers the *(neg)entropic work* of the subject, (iii) the *logical noise* of which rumbles throughout the investigation and forcing of a new *truth*, (iv) its reverberation irreversibly (entropically) transforms the *knowledge* of the situation wherein the event happened.

---

43 Fraser, 'The Law of The Subject', p. 9 (my emphasis).
44 Jean-Jacques Lecercle, *Deleuze and Language* (Basingstoke & New York: Palgrave Macmillan, 2002), pp. 109-10)

And it is here, finally, whereon rests my claim that, if an education is to be effectively '*by* truths', then, it must be thought-through from the bias of *some temporality*—which, as Lecercle points out, must be something like a 'retroactive' activation of the (temporal*ised*) traces of the (non-temporal) event. And if every truth procedure, Badiou claims, must proceed from 'the bias of the void', this would mean that education must consequently proceed from the combined bias of *the void + temporality*—a dyad which can be made to reverberate, loudly and clearly, with the signifier "noise":

the void + temporality —> noise

1.2. Badiou's Philosophy of Education

A super-dense body, hanging in conceptual space

One is tempted to rehearse the following hypothesis: if there is anything that can described as "Badiou's Philosophy of Education", this happens to be a super-dense body, all of its virtual volumes tightly packed in two singular, brief statements:

(statement 1) '"education" (save in its oppressive or perverted expressions) has never meant anything but this: to arrange the forms of knowledge in such a way that some truth may come to pierce a hole in them'.[45]

---

45 HI p. 9

(statement 2) 'the only education is an education *by* truths'.[46]

There are three immediate implications of taking on board Badiou's pedagogical statements:

(1) we accept that there are, indeed, such things as *truths* (which implies, of course, accepting the event and the subject)

(2) we accept that education is consistent with truths.

(3) we accept that education is inconsistent with knowledge.

But most importantly, once this Badiouian framework is accepted, and once decided to follow through its consequences, we immediately encounter a crossroad: on what side of truth does education lie? There are, at bottom, only two possible routes:

(i) education as a truth procedure, i.e. education itself as a producer of truths (education, then, as a *condition* of philosophy)

(ii) education as a mode, or instance, of philosophy, i.e. education as a composer, or tender of truths (education, then, *conditioned* by truths).

Education as an evental site and/or as producer of truths on one side; education as a tender, or minder of truths on the other: there are not too many clues in the Badiouian corpus regarding this decision. As of this writing, Badiou has simply left his supermassive pedagogical object hanging in philosophical space, holding itself in place by its own gravity: 'the only education is an education *by* truths'—enough said.

The condensed force of this statement, however, has inescapably attracted the

46 HI p. 14

attention of not a few pedagogues and philosophers of education. Therefore, before taking a final stance on this point, it might be worth making a very brief bibliographical detour, in order to listen to what some of these Badiouian pedagogues have had to say about this issue.

Pedagogy of the event

The case for 'a pedagogy of the event' is most strongly made by Dennis Atkinson. In a series of publications outlining a program of 'pedagogies against the state'[47], Atkinson outlines conceptual variables for 'a flexible teaching-learning space that attempts to accommodate unpredictable or unexpected directions in learning.'[48]

If the radical anti-statism of Atkinson's project seems to be fully coincidental with what I am proposing here, there is an important difference—as subtle as it is philosophically structural—in that the event, for Atkinson, seems to be possible *within* education: i.e it is education itself that becomes the 'risky situation' wherein 'ontological boundaries become uncertain or fractured.'[49]

> Although Badiou is concerned with the event in relation to such major disturbances in the fields of science, politics, art and love, I think there is some mileage in taking this idea and applying it to more localised micro-events of learning viewed as local processes of becoming in which learners emerge as subjects. This seems to me to be about the production of new form and new formalisations.[50]

Here my position slightly departs from Atkinson's in that I look at the event as

---

47 See Dennis Atkinson, 'Pedagogy against the state', *International Journal Of Art & Design Education* 27:3, (2008), pp. 226-240.
48 Dennis Atkinson, 'Pedagogy of the Event', <https://www.researchgate.net/publication/255583005> [accss. 23 Jun 2017], p. 3.
49 Ibid. p. 5.
50 Ibid. p. 6.

not happening *within* education: as we shall see, the latter—being the temporal-praxial side of philosophy— takes care of events happening in its *outside*.

Education as a truth procedure

Following a similar route than that taken by Atkinson, Tyson Lewis qualifies education as a truth procedure in its own right. Making a footing on Badiou's account of Althusser's subjective categories—viz., *science* (no subject, only the object of the economy), *ideology* (subject with no object) and *politics* (subjectivity without subject)—Lewis[51] then ponders

> how can we think the category of the subjectivity without subject? what is the content of this subjectivity beyond the interpellated subject? *It is here that education must be added to Badiou's list*, for education is a practice (a) whose raw materials make up the subject's world, (b) whose practice is a redistribution of these things (a work on and through perceptual transformation), and (c) whose product is a subjectivity without subject (dis-identification with all assigned roles). In this equation, education is an "encounter" between subjects and raw materials in such a way as to introduce a radical destabilization of the self and its perceptual field–a new mode of seeing, listening, speaking and reading as Althusser would say. The result is a subjectivity stripped of any identity allotted to him and her within the community.[52]

Lewis seems to be aiming to answer Badiou's enquires into Althusser's project, namely, the consolidation of a notion of 'Subjectivity without a Subject'.[53] His answer to

---

51 One can find Badiou's take on the Althusserian categories of subjectivity in chapter 3 of M: 'Althusser: Subjectivity without a Subject', pp. 58-67.

52 Tyson Lewis, *The Aesthetics of Education: Theatre, Curiosity, and Politics in the Work of Jacques Rancière and Paulo Freire* (New York & London: Continuum, 2012), p. 37 (my emphasis).

53 A project that, according to Badiou, '[f]or the time it was quite some project, and it still focuses our intellectual tasks to this day. This admirable effort, as yet unnamed (to think subjectivity without a subject), is enough to make Louis Althusser worthy of our most rigorous respect'; see M p. 66.

this question—that education, by producing 'a subjectivity stripped of any identity', provides a space to understand this notion—is not far from the one I am positing here: namely, that education is a generic *subject of subjects.*

Lewis, however, comes even closer to the Badiou-Freire bridge that I am intending to construct here in a collaborative paper with Daniel Cho[54]. Identifying not dissimilar resonances and tensions between Badiou and Freire—and almost spelling out the thrust of my own pedagogical argument—they assert that

> [p]erhaps, today the two figures that stand for revolutionary thought in contemporary philosophy and education are Alain Badiou and Paulo Freire: Badiou for his remarkable work on the subject as a fidelity to a truth-event, and Freire for his theory of education as a political practice. But, here, the relationship between Badiou and Freire is an exact reversal of Descartes and Rousseau: though Badiou and Freire remain fundamentally apart in regards to their respective theories of the subject (for Badiou, subject is a subject of truth, and for Freire, subject as subject of dialogic praxis), they remain strikingly similar in their concepts of education, namely, both Badiou and Freire envision education as a revolutionary space.[55]

Indeed, if for Badiou education means 'to arrange the forms of knowledge in such a way that some truth may come to pierce a hole in them' and, concurrently, if for Freire—as Lewis and Cho put it— 'education is a praxis for the transformation of oppressive relations'[56], the corollary must be then that Badiou and Freire's 'theses on education', are 'complementary': Lewis and Cho's conclusion seems to spell out nothing less than one of the principal hypotheses that I am exploring here. What is more, they consider—as indeed I do—the construction of such bridge as an indispensable strategy

54 Daniel Cho & Tyson Lewis, 'Education and Event: Thinking Radical Pedagogy in the Era of Standardization', *Studies in Media & Information Literacy Education* 5:2 (2005) <http://www.utpress.utoronto.ca/journal/ejournals/simile> [accss. 11 Jul 2019].
55 Ibid. pp. 2-3
56 Ibid. pp. 2-3

in the struggle for the defence of critical education, 'especially, during a time when standardization is the dominant mode of education in late capitalism.'[57]

Finally, and probably most interesting, is Lewis and Cho's approach to problematising Freire's seminal notions of *dialogue* and *curiosity*, which they do by introducing none other than Lacan into the conversation—which is precisely the same move I intend to do when discussing the idea of noise-inside in Chapter 6. Exploring this same territory, Lewis and Cho argue that dialogue is never free from the distortions effected by desire, insofar as it

> always risks becoming the hysterical dialogue in which the teacher holds a secret relationship to the answer, the missing part of knowledge, which the student tries to uncover. Or in Lacan's terms, the teacher's precious object that incurs the student's desire is the *agalma*. What fills the gap separating the teacher and student in relation to knowledge so that their dialogue appears to be the exchange of critical knowledge is the same thing that sutures the disjunctive relationship of the Master/slave and the pedagogy of play so that they appear to be processes of learning, namely, the fundamental pedagogical fantasy.[58]

Of particular relevance is Lewis and Cho's mention of the *agalma*, that mysterious and fascinating core hidden deep within Socrates' ugly body and which arouses the ineluctable desire of an inebriated Alcibiades in the *Symposium*.[59] In Lacan's

---

57 Ibid. p. 3. As Sandino Núñez writes, '[t]he political truth of the next era is played in education. Education is the stage wherein today's struggle for the political tomorrow of society, is beginning to be exposed.' Sandino Núnez, 'La educación, la nueva izquierda demagógica y la lógica del mercado', Geopolítica de la Subjetividad, (27 Jan 2012) <http://sandinonunez.blogspot.com/2012/01/la-educacion-la-nueva-izquierda.html> [accss. 28 Jan 2012].

58 Ibid. p. 11.

59 'The way I shall take, gentlemen, in my praise of Socrates, is by similitudes. Probably he will think I do this for derision; but I choose my similitude for the sake of truth, not of ridicule. For I say he is likest to the Silenus-figures that sit in the statuaries' shops; those, I mean, which our craftsmen make with pipes or flutes in their hands: when their two halves are pulled open, they are found to contain images of gods [ἀγάλματα]. And I further suggest that he resembles the satyr Marsyas. Now, as to your likeness, Socrates, to these in figure, I do not suppose even you yourself will dispute it; but I have next to tell you that you are like them in every other respect. You are a fleering fellow, eh? If you will not confess it, I have witnesses at

early work,[60] the *agalma* appears as a confused knot *drive-desire-love*, and will eventually evolve into the notion of *objet petit a.* Insofar as I associate here this precise knot—desire, *objet-a*, object voice—with what I term *noise-inside*, Lewis and Cho seem to be identifying this same symptomatic area within education—and one which the latter cannot but engage with (and one which Badiou also identifies when mentioning the 'Socratic function of corruption of the youth' and the seductive power of philosophical transmission).[61]

If Lewis and Cho are not the only scholars to associate Badiou with Freire, they are, to the best of my knowledge, the only ones who explicitly point to something like the operation of *a void* at the heart of the pedagogical relation:

> [t]he fantasy that the other has *the* relationship to the missing part of knowledge must be traversed uncovering the traumatic Real of knowledge (i.e. that it is always lacking). Here, we see where the act, the traversal of the fantasy, articulates with the event: rather than seeking wholeness in the other, the event structures the truth that at the center of the teacher/student relationship is a void, that is to say, the event is the traversal of the fantasy.[62]

Considering that *if* this void appears within the temporality of education *it must do so as noise*, Lewis and Cho's notion of 'a void at the center of the teacher/student' relationship' strongly resonates with the idea of an education *in* noise that I am positing here.

There is in all of this, however, a subtle but crucial difference with the notion of

hand. Are you not a piper?' Plato, *Symposium* 215a-b.

60 See Jacques Lacan, *The Seminar of Jacques Lacan: Book VIII, Transference, 1960-1961*, trans. by Cormac Gallagher <http://www.lacaninireland.com/web/wp-content/uploads/2010/06/THE-SEMINAR-OF-JACQUES-LACAN-VIII-Draft-21.pdf> [accss. 11 Jul 2019], pp. 118-88.

61 Alain Badiou, 'Philosophy as Biography', *The Sympton* 9 (fall 2008) <http://www.lacan.com/symptom9_articles/badiou19.html> [accss. 8 Apr 2015]

62 Cho & Lewis, 'Education and Event', p. 11.

education that I am developing in this thesis: Lewis and Cho seem to locate the event *within* the space of education (as indeed does Kent den Heyer)[63] whilst I locate the event outside of it.

Which means that, ultimately, none of the theses just discussed—viz. a 'pedagogy of the event' (Atkinson), education as a truth procedure (Lewis, Cho, den Heyer)—can be fully consistent with my main assumption: that education and philosophy are biconditionally related. And it is precisely this biconditionality, I claim, that the Freirean element brings to the Badiouian pedagogical argument.

A (Platonic) education by truths

One cannot move on from a discussion about Badiou and education without mentioning the work of A. J. Bartlett, in my view the utmost Badiouian pedagogue. Although, in point of fact, rather than *pedagogue*, one should describe Bartlett as something along the lines of a Badiouian *thinker of education*, given the clearly negative overtones that the term *pedagogy* acquires in his work—a term he associates with the knowledge and the Law of the state. Indeed, the word 'pedagogy' is for Bartlett clearly opposed to any conception of a proper education by truths: this must be, without exception, subtracted from the knowledge of the state, which is always ready to kill any emergence of true subjectivity—as Bartlett himself puts it, 'we must not fail to recall that the pedagogy of the state precisely does remake the student in its image, making it die in a certain respect.'[64]

---

63 See: Kent den Heyer, 'Education as an Affirmative Invention: Alain Badiou and the Purpose of Teaching and Curriculum', *Educational Theory* 59:4 (2009), pp. 441-63; Kent den Heyer (ed.), *Thinking Education Through Alain Badiou* (New York: Wiley-Blackwell, 2010); and Kent Den Heyer & Diane Conrad, 'Using Alain Badiou's Ethic of Truths to Support an 'Eventful' Social Justice Teacher Education Program', *Journal of Curriculum Theorizing* 27:1 (2011), pp. 7-19.

64 A. J. Bartlett, 'Refuse become subject: The educational ethic of Saint Paul', *Badiou Studies* 3:1 (2014), pp. 193-216 (p. 197). One must note that Bartlett, as a deep-dyed Badiouian, follows Badiou's own stance

Not only does Bartlett categorically assert (like, we saw, Atkinson does) that education must distance itself the state: moreover, following a (Badiouian) notion of Platonic education, for Bartlett, the latter must subtract itself from the *sophistry* of knowledge tout court—if, that is, it is to retain any compatibility with truth.

> What we hope to articulate by exploring the dialogues in this way, that is by deploying Badiou's 'platonic' categories back into the Platonic corpus, is the logical and implicative link between our primary axiomatic statement: that 'the only education is an education by truths' and what we might call its consequent yet coincident axiomatic statement that 'thought is nothing other than the desire to finish with the exorbitant excess of the state.'[65]

The pedagogical argument developed in this thesis owes Bartlett's important work a double debt: firstly, Bartlett is, as far as I can tell, the scholar who most directly engages with the consequences of Badiou's claim that *the only education is an education by truths*:

> [t]here are at least three key assumptions supporting this claim: the existence of truths; the existence of education; and the link between the two, a link that in fact requires that education be thought as something other than an adjunct to any institutional form.[66]

Secondly, Bartlett seems to identify the same structural pillars (I am tempted to call them *hermae*) on which I am building my own pedagogical argument. For Bartlett,

---

on what the latter terms 'pedagogism', which in LW is associated with the reactionary subject of science; see LW pp. 75, 78. It is also notable the certain disdain with which Badiou already uses the term almost a quarter of a century earlier, in *Théorie du sujet*: '[p]edagogy delimits a splace' (Alain Badiou, *Theory Of The Subject*, trans. Bruno Bosteels (London & New York: Continuum, 2009), p. 39; hereinafter TS), wherein 'splace', a portemanteau of "space of placement" [*espace de placement*] is Badiou's larval term of later concepts such as 'state of the situation' and 'world'; see Bruno Bosteels' 'Translator's Introduction' in TS p. xxxi. For my part, considering that the name *Pedagogy of the Oppressed* is synonymous with the Freire singularity, I will keep the term *pedagogy*, on the understanding that I am using it in its Freirean emancipatory sense, and never in the Badiouain, oppressive, one.

65 A. J. Bartlett, *Badiou and Plato: An Education by Truths* (Edinburgh: Edinburgh University Press, 2011), p. 3.

66 Ibid. p 1.

'[e]ducation is constituted by four key components: the epistemological, the pastoral, the political, and the psychological. Or: a theory or theories of knowledge, an ethic of care, a politics and a psychology of the subject.'[67] Indeed, (1) Bartlett's 'question of knowledge' and its 'transmission', is akin to the material equivalence I am proposing here, viz., *philosophy <=> education*; (2) his pastoral ethics of 'care of itself and others' is strongly resonant with my positing of *education as a tending of the time of the subject*; (3) Bartlett mentions the political aspect of a 'collective provision of education': it is here where the Freirean element of a *critical education* (inextricably linked to a conception of *cultural revolution*), appears most strongly; and finally, (4) the idea of subjects emerging as 'the relation between educators and educated', seems to coincide precisely with the concerns developed in my thesis around notions of *dialogue*, *noise* and, most clearly, around the issue of *relation* itself. All in all, there is an overall structural coincidence with Bartlett in that 'these component parts betray an ambiguity or better a disjunction—that between truth and knowledge.'[68]

Bartlett's thought presents the most systematic deployment of the Badiouian categories performed by any thinker of education. His work guides one of the structural decisions operating in my thesis: that *education is on the side of philosophy, and hence, it is not itself a truth procedure*.

Having said that, once forced to be consistent with both Freire and Badiou, such a decision can altogether be stated as the logical conclusion of a syllogism:

(1) a philosophy implies an education and an education implies a philosophy (in consistency with Freire)

---

67 A. J. Bartlett, 'Refuse become subject', p. 194.
68 Ibid.

(2) philosophy is subtracted from the production of truths (in consistency with Badiou:).

(3) *ergo*, education must be subtracted from the production of truths.

Preliminary moves

In the Preface to his *Philosophy of Right*, we find not only Hegel's famous reference to philosophy as an 'Owl of Minerva' which flies 'too late', but also a subtle pointer to the educative-philosophical mechanism:

> [o]nly one word more concerning the desire to teach the world what it ought to be. For such a purpose philosophy at least always comes too late. Philosophy, as the thought of the world, does not appear until reality has completed its formative process, and made itself ready. History thus corroborates the teaching of the conception that only in the maturity of reality does the ideal appear as counterpart to the real, apprehends the real world in its substance, and shapes it into an intellectual kingdom. When philosophy paints its grey in grey, one form of life has become old, and by means of grey it cannot be rejuvenated, but only known. The owl of Minerva takes its flight only when the shades of night are gathering.[69]

In Hegel's absolute idealism, the 'intellectual kingdom' of philosophy is shaped always with some delay, when 'reality' has already fully formed: no idea is able to rejuvenate that which has already matured—it can only paint 'its grey in grey' of knowledge, when the world has already set. The tradition that philosophy is empty and conditioned from the outside by events emerging in the world, is not new. It is a philosophical tradition that, according to Badiou, was initiated by Plato[70] and has been echoed, not only by Hegel, but also by others such as Deleuze and, of course, by Badiou

---

69 G.W.F. Hegel, *Philosophy of Right*, trans. by S.W Dyde (Kitchener: Batoche Books, 2001) p. 20.
70 MP pp. 34-35.

himself. Badiou, however, takes a step further and makes explicitly clear *the need* of this separation (*de-suture*) between thought and the human praxes that condition it. Hence, the delineation of the four generic truth procedures which condition philosophical thought from the outside: science, love, politics and art. To repeat: in Badiou's configuration, only within these four realms can events happen (a political revolution, an artistic invention, a scientific discovery, an amorous encounter); a truth emerges as the result of the militant investigation by a subject who, touched by the impossible event, illegally affirms the consequences of such impossibility, forcing the situation to accept them and thereby to change its logic. New knowledge in the situation will have thus been created and established (the subsequent puncturing and re-creation of which will have depended on the appearance of an-other subject, itself borne out of another truth procedure affirming a new evental impossibility…)

Philosophy, in this conception, is not one of the subject truth procedures: it does not *produce* truths, it prepares the conceptual space for their arrival, the 'intellectual kingdom' wherein it thinks them together and announces their existence. Philosophy arranges a place for a *composite thinking* of the truths of its time, after the event has happened, when the militant work of the subjects is already taking shape and 'when the shades of the night are gathering'.

Space of compossibility/time of composition

Education and philosophy seem to *both* name the tending of a 'space of compossibility' for truths. So what are their *different roles*? As we shall see in the next chapter, my position is that education *temporalises* this space of compossibility: it tends to the subjects of the truth procedures and these, as we already know, are nothing else than *the temporal*

unfolding of a truth and—as Badiou himself asserts—*the subjective production of a present.*

Education assists *both* in the naming of a truth *and* in the praxial, temporal process that follows the consequences of that naming: in other words, if such naming is 'the trace of philosophy's intervention upon truths',[71] education is the praxial follow-through of said philosophical intervention. It is, once again, *a production of time.*

This position, however, begs a question: what about the transmission of so-called technical skills, necessary in any scientific, artistic and humanistic education? Is there any room in the generic context presented here for such specificity? To answer this question, it might be useful to separate those indexed educational places (say, *musical* education, *mathematical* education, *political* education, and so on) from the subjective, time-producing praxes that a proper education by truths should always inhabit (or, to put it in early Badiouian terms: to separate the indexed 'splaces' from the 'outplace').[72] For the sake of simplicity, I will refer, following Freire, to such non-subjective, *placed* education, as *training*. The opposition then becomes one between Education and training (an opposition that mirrors the one between truth and knowledge, and echoes that between philosophy and sophistry). This last point is not a mere rhetorical device: in the same way that, according to Badiou, sophistry should not be dismissed but treated as a valid interlocutor by philosophy, education should engage full-on with the issue of training.[73]

---

71 Norman Madarasz, 'Introduction', MP 21.
72 See n. 56, above.
73 'Just as Plato has the professionals of sophistry, at once bullheaded and bearers of modernity, as his interlocutors, so also does the attempt to radicalize the rupture with classical categories of thought today define what it is reasonable to call a "Great Sophistry," linked essentially to Wittgenstein' (MP p. 97); c.f. '[w]e can, and we should, write new Republics and Symposiums for our contemporaries. Just as Plato wrote the Gorgias and Protagoras for the great sophists, we should write the Nietzsche and the Wittgenstein. And, for the minor sophists, the Vattimo and the Rorty. Neither more nor less polemical, neither more nor less respectful' (C p. 21). Badiou, of course, eventually wrote his own *Wittgenstein*; see: Alain Badiou, *Wittgenstein's Antiphilosophy,* trans. by Bruno Bosteels (London & New York: Verso, 2011)

2. Philosophy <=> Education

And in the struggle this pedagogy will be made and remade[1]

to which, as I suppose, our present argument would confine the term "education" whereas an upbringing which aims only at money-making or physical strength, or even some mental accomplishment devoid of reason and justice, it would term vulgar and illiberal and utterly unworthy of the name "education." Let us not, however, quarrel over a name, but let us abide by the statement we agreed upon just now, that those who are rightly educated become, as a rule, good, and that one should in no case disparage education, since it stands first among the finest gifts that are given to the best men; and if ever it errs from the right path, but can be put straight again, to this task every man, so long as he lives, must address himself with all his might.[2]

2.0. Intro: the Educational Argument

The pedagogical theme of this thesis will proceed in a double movement: (1) I will posit that the process, or *trajectory of a truth procedure* discussed earlier[3], should become something like the philosophical charter for the praxis of education—in fact, I will argue that education is the praxial dimension of philosophy, tout court; simultaneously (2) an immanently Badiouian conceptual space will be utilised to recompose quintessentially Freirean notions such as *humanisation*, *critical consciousness* and *epistemological curiosity*, a humanist cluster of concepts seemingly very distant from the mathematical formalism of

---

1 Paulo Freire, *Pedagogy of the Oppressed*, trans. by Myra Bergman Ramos (New York & London: Continuum, 2005), p. 48; this English translation referenced hereinafter as POe. Unless clarified, all references are from the 63rd edition in Portuguese: Paulo Freire, *Pedagogia do Oprimido* (op. cit.).
2 Plato, *Laws* 1.644a-b
3 See chapter 1, section 1.1.

Badiou's ontological constellation.

Such resonance between an anti-humanist subtractive ontology and an explicitly humanist, relational logic—which, considering the conceptual distance, if present will have been necessarily nonlocal—is only made possible by the fact that, on the one hand, Freire's is less a pragmatic pedagogical methodology than a rigorous philosophical system in its own right—which is precisely why Badiou's ontological foundations *can* be re-tuned to be accepted by the Freirean body; simultaneously, on the other hand, Freire's pedagogically-conditioned thought, by accepting the conceptual transplant, indirectly and *at a distance* delivers the unpacking of Badiou's singular pedagogical theme: namely, that 'the only education is an education *by* truths'.

Freire insisted throughout his public life on the fact that he saw himself less as a pedagogue than a thinker of *humanisation*, understood in its most generic sense: viz., as the thinking-through of every possible consequence of what does it mean to be human, and to relate both with others and with the world. The opening paragraph of his magnum opus, *Pedagogía do Oprimido* is unequivocal about this: 'a concern about people, as beings in the world and with the world. About both their *being* and how they *come to be* [*em torno do* que *e de* como *estão sendo*].'[4] Earlier, the first sentence of his first ever publication in English, is yet more unambiguous on this point: '[a]ll educational practice implies […] an interpretation of man and the world'.[5]

Freire's is a less a pedagogical theory than a configuration of thought—a philosophical system, tout court. The fact that it is regarded, at best, as a philosophy *of education*, simply brings out the fact that those two terms, "philosophy" and "education", have been inextricably part of each other, throughout their common, universal history

---

4 PO 40 n1, c.f. POe 43, n1.
5 Paulo Freire, *Cultural Action for Freedom* (Harvard: Harvard Educational Review, 2000), p 13; hereinafter CAF.

(it is not only that education and philosophy were borne conjoined in their remote Western origins—behold the Eleatics, the Pythagoreans, the Academy, the Peripatetics… Education in its most generic sense, or to put it differently, the idea of *transmission per se*, seems to have been more of a universal concern than philosophy itself—behold the guru-shishya tradition in Hinduism, the Dharma transmission in Zen Buddhism, the Zend in Zoroastrianism, the Masorah in Judaism, the Sahabah in Islam, the Apostles in Christianity…).

Freire's relevance today stands on the following claim: it is a gesture that not only brings forth the philosophical spirit of education together with its twin, the educational soul of philosophy: in the same move, it thrusts the education/philosophy pair into a dialectics of praxis whence it emerges with a subjective force which, as I hope to show, includes not only a notorious political dimension, but also an artistic, scientific and libidinal one as well. This, I maintain, is what makes Freire's name a *singularity* (albeit *not* an event: strictly speaking, events never occur *within* philosophy).

There is yet another injunction authorising the philosophical splice that I intend to perform: Freire was adamant that his ideas be constantly recycled, adapted, re-composed—his own voracious eclecticism a testament of an *ethics of unfinishedness* he applied to his own work. There is also, however, a single caveat: in order to reconfigure Freire, one should first identify the *central nucleus* that moulds the *essence* of his thought.

It is with these Freirean principles in mind, and attempting to respect their spirit, that I will delineate the following trio of postulates:

(1) I posit that the aforementioned 'core' or 'central nucleus' of Freire's thought is commensurable with Badiou's notion of *subjective fidelity* (and therefore, consistent with

the latter's conception of Truth). This, essentially, opens up a space for the thinking of *truths* within Freire's system (and hence rendering it *philosophical* rather than *anti-philosophical* or *sophistic*). In the particular case of Freire's theoretical configuration, such fidelity is what Badiou refers to as 'fidelity to a fidelity'[6], and what I refer to here as a *generic* fidelity: the (ethical, pedagogical) work of tending *fidelity per se*, regardless of the particularity of whatever truths a subject is faithful to.

The begged question is, of course, what *event* is this generic fidelity faithful to (what is it affirming, what new connections does it make in the situation, how is it resisted etc.)? The answer being: it is a fidelity directed towards a *subtractive* notion of *humanisation*. What this means is that the so-called *anthropogenic* event is herein (i) *undecidable* (chronologically unsituated, residing in a ultrahistorical *arché*, as Giorgio Agamben would have it), (ii) latently able to produce a generic and always incomplete *subject of subjects* (in Freire's terms, *inconcluso*), (iii) whose *indiscernible* (random, a-legal) trajectory—the ultimate Truth of which remains *unnameable* (i.e. remains in the realm of *noise*)—and, finally (iv) is contingent on *language as condition of conditions*.

(2) Articulating an immanent conceptual split within humanisation itself, the operator of subjective fidelity within Freire's system takes, likewise, the name 'humanisation'. Such operator is what connects the Freirean notion of praxis (viz. *conscientização*) with the affirmation of *humanisation as event*.

From a (purely) Badouian perspective, however, one might glimpse a problem arising with this split notion of humanisation: to wit, if indistinctly equated to the event, the operator of fidelity can easily collapse into either 'dogmatism' (viz., *everything* is in fact dependant on the event) or 'spontaneism' (viz., *only* those taking part in the event

---

6 E, p. 67.

are making it so).[7] Therefore, in order to avoid such trap—and following the Badiouian directive—*humanisation-as-operator* needs to be clearly separated from *humanisation-as-event*. This potential issue is, in fact, already being taken care of by Freire. Firstly, there is what could be described as a (clearly Hegelian) *founding separation*, wherein the inaugural affirmation of the anthropogenic event *already contains its negation*; in other words, for Freire the affirmation of humanisation always already implies a split:

humanisation |de-humanisation

Which, as a consequence, *forces* a subject to *act* against such negation. We have here, then, a strong mutual resonance, facilitated by a common Hegelian chamber present in both Badiou and Freire.[8] If, for Badiou, what a proper operator of fidelity requires—in order for it not to degenerate into a mere statist operation—is a 'genuine separational capacity' from the event itself,[9] surely then, such requirement is met by the Freirean notion of *humanisation-as-event* (the split emergence of humanisation *and* its negation) and *humanisation-as-operator* (the militant work of resistance against *de-humanisation*). Freire himself—almost as if aware of Badiou's concerns—could not be clearer on this matter:

> [w]hile the problem of humanization has always, from an axiological point of view, been humankind's central problem, it now takes on the character of an inescapable concern. Concern for humanization leads at once to the recognition of dehumanization, not only as an ontological possibility but as an historical reality. And as an individual perceives the extent of dehumanization, he or she may ask if humanization is a viable possibility. Within history in concrete, objective contexts, both

7 See BE pp. 237-8.

8 If the presence of a Hegelian kernel in (mostly early) Badiou is undeniable, one should not overlook the fact that Hegel is also a constant reference in Freire's oeuvre, and not only in his early 1970s writing, but also throughout the 80s up until, and including, his later 1990s work.

9 BE, p. 237.

humanization and dehumanization are possibilities for a person as an uncompleted being conscious of their incompletion.[10]

The separation in Freire, then, is itself a *double step*: the anthropogenic event itself, (i) separated from its *affirmation* ('concern for humanisation'), which (ii) already contains its *negation* ('the recognition of de-humanisation'). All of which entails that, firstly, the subject is always incomplete (*self-consciousness* of this incompleteness, moreover, being an ethical imperative), and secondly—and most crucially—that the Truth implied in the event of humanisation remains by necessity always *unnameable*, thus avoiding what would be the disastrous substantialisation of "the human", which in Freire symptomatically appears as a critique of humanitarianism which is a ferocious as Badiou's.[11]

In the process of developing this postulate I will aim to unearth some fundamental connections which link this evental site of humanisation—particularly with regards to its conditioning by language—to an unlikely trio, wherein Freire and Badiou will be joined by Noam Chomsky. Indeed, it is hard to avoid a symptomatic reading of the Freirean dialectical discourse, wherein the anthropogenic site always appears as something like its inaugural point, or its zero degree:

> qua thinking bodies [*enquanto corpos conscientes*] in a dialectical relation with an objective reality upon which they act, human beings are involved in a permanent process of conscientization […]. Its original source is that moment far off in time that Teilhard de Chardin calls "*Huminisation*," at which point human beings made themselves capable of revealing their active reality, of knowing it and of *knowing that they know*.[12]

10 POe, p. 43.

11 This anti-humanitarianism is one of the reasons that, I claim, Freire's alleged humanism cannot be fairly assessed without considering it in tandem with his structuralism. In fact, Louis Althusser's influence on Freire is as explicit as it is curiously glossed over by most commentators. See, for example, CAF pp. 16, 32 and POe pp. 159-60.

12 Paulo Freire, *Ação cultural para a liberdade*, 5th edn (Rio de Janeiro: Paz e Terra, 1981), Chapter 15, 'Algumas notas sobre conscientização', para 35 (my emphasis). See also 'An Invitation to Conscientization and Deschooling', *The Politics of Education: culture, power and liberation*, trans. by Donaldo Macedo (Basingstoke: Macmillan, 1985), pp. 167-173 (p. 172).

Freire's reference to Pierre Teilhard de Chardin might not be the best opening when attempting a conversation on the origins of language and symbolic thought with the no-nonsense, ultra-empiricist Noam Chomsky (neither it would, for that matter, sit well with the mathematical formalism of the anti-vitalist Alain Badiou, nor with the refined, rigorous epistemology of Cécile Malaspina). Though I do not know of any mention of Teilhard by Chomsky, it would not be a stretch to imagine that the former's progressionist account of the evolution of a cosmic sphere of thought (the *noosphere*), teleologically directing itself towards a messianic 'Omega Point' of divine unification with Christ, would be promptly rebuffed by the latter as pseudo-scientific poppycock.[13] The fact remains withal that Freire does mention de Chardin on more than one occasion:[14] and he does so when needing to underline the idea that (a) humanisation comprised a *beginning*, a moment 'far off in time' wherein the separation from Nature and animality began, and that (b) it is an event which will have been indexed by the advent of language/thought in the early human's brain. Considering that Teilhard's orthogenetic-theological theories on this matter seem, from the point of view of modern evolutionary-biology, slightly questionable to say the least, the tactic I will employ here is to substitute the former's not entirely indubious science, with Chomsky's, Ian Tattersall's, et al. latest findings in evolutionary linguistics, all of which are grounded in hard paleoanthropological evidence. The wager is that the spirit of Freire's idea shall, not only remain unbetrayed by such conceptual transplant but that, much to the contrary, reinvigorated by "proper" science, it will gain a new lease of life.[15]

13 See for example, Peter Medawar's devastating critique of Tielhard's *The Phenomenon of Man*: Peter B. Medawar, 'Critical Notice', *Mind* LXX (1961), pp. 99–106, doi:10.1093/mind/LXX.277. 99.

14 See also, for example, Rex Davis & Paulo Freire, 'Education for Awareness: a Talk with Paulo Freire', *Literacy and Revolution: the Pedagogy of Paulo Freire*, ed. by Robert Mackie (New York: Continuum, 1981), pp. 57-69 (pp. 58-9).

15 One finds now that Teilhard has become a key referent to the transhumanist, cyberlibertarianism expounded by the Californian Ideology of Silicon Valley, megaphoned in the pages of *Wired* magazine; David Livingstone comments that '[i]n 1995, Jennifer Cobb Kreisberg declared in *Wired*, "Teilhard saw the Net coming more than half a century before it arrived."' (David Livingstone, *Transhumanism: The History of a Dangerous Idea* (USA: Sabilillah Publications, 2015) p.290); see Jennifer Cobb Kreisberg, 'A

(3) Education—as long as it remains faithful to the operation of humanisation, i.e. it does not decay into mere 'training'—*induces* a Subject that, if borne out, it does so as the *most generic subject possible*. This, I maintain, is the Badiouian-Freirean Subject of Education. Again, I am here utilising Badiou's technical terms within a Freirean domain of applicability: what I am proposing is that a well-configured Freirean education activates a generic Subject which shares at least one element with each one of the truth procedures.

What this implies is that, as mentioned above, there needs to be the recognition of a double incompleteness: firstly, in the generic event of humanisation itself (the Truth of which is unnameable) and, secondly, in the (self-conscious) incompleteness of the humanising subject. In other words, this is a *doubly castrated* subject. And so it should be: such is nothing less than 'the mark of castration' that, Badiou writes, 'separates truth from itself and, in the same movement, frees up its power and hypothetical anticipation from the encyclopaedic field of forms of knowledge. This power is the power of forcing.'[16]

As we shall see, this generic educational subject, turns out to be not entirely anisomorphic with Frank Ruda's 'philosophical subject'. In Ruda's analysis, by taking 'the position of the very form of the subject', the philosophical subject becomes—just as our subject of education—'twice barred' on account of it being 'conditioned by the four conditions'.[17]

Globe, Clothing Itself with a Brain', *Wired* (June 1995) https://www.wired.com/1995/06/teilhard/ [accessed 7 Mar 2018]; see also: Stephen Balkam 'What will happen when the internet of things becomes artificially intelligent?' https://www.theguardian.com/technology/2015/feb/20/internet-of-things-artificially-intelligent-stephen-hawking-spike-jonze Fri 20 Feb 2015 [accessed 7 Feb 2018].

16 C p. 139

17 Frank Ruda, *For Badiou: Idealism without Idealism* (Evanston, IL: Northwestern University Press, 2015), p. 132. Bearing in mind the material equivalence between philosophy and education which my argument is constructed on, this outcome is less unexpected than it is auspicious.

One could equally say that it is a subject conditioned by what Justin Clemens refers to as 'the condition of conditions' of Badiou's philosophy: namely, the (Lacanian) *letter*.[18] It is in this structural, abstract sense that I intend to deploy throughout this thesis the concept of *language*—albeit without completely identifying one with the other: it is, rather, a conception of language which approaches asymptotically that of the letter. Indeed, insofar as there is 'no simple opposition between "letters" and "void" in Badiou',[19] the former clearly inhabits an ontological realm: as an essentially mathematical abstraction, the letter still lingers on the side of the void and of being—still a signifier of *nothing*, still outside-time. Language, on the other hand, is always already *appearing* in the relational, temporal world, riding on the signifier's never-ending search (desire) for some signified: as such, language is *the trace of the temporality produced by the movement of the letter* into the physico-phenomenological (or, for Badiou, onto-logical) realm. Wherefore language, as the temporalisation of the signifier, ignites the inaugural murmur of noise, carrying (conditioning) the subjective, (neg)entropic *work* involved in the trajectory of a truth.

Overall, my wager is that the arch drawn by this triple-postulate will outline a properly reconfigured *Pedagogy of the Oppressed*, which yields a subject predicated on the following properties: it is a generic *Subject of subjects*, whose fidelity to the Truth implied in the anthropogenic event (*humanisation-as-event*) is exercised (or rather *disciplined*) through the *operation* of humanisation, *generically* conditioned by *language*.

The usefulness (or otherwise) of this hypothetical arch is that it might bring a remarkable corollary: namely, that Badiou's philosophical configuration (viz., being, truth, event, subject and so on) can—and *should*—be thought *together with* its immanently

---

18 Justin Clemens, 'Letters as the Condition of Conditions for Alain Badiou', *Communication & Cognition* 36:1&2 (2003), pp. 73-102.
19 Ibid, p. 94.

pedagogical implications. Thereupon that 'half-said' aspect of Badiou's philosophy of education, condensed in the 'education by truths' diktat, suddenly opens up a hidden resonant chamber, at once exposing the full spectrum of its pedagogical possibilities.

All of this underscores what I have referred to as the key assumption of my thesis: namely, that philosophy and education are *materially equivalent*. In other words, that a philosophy implies an education,[20] *and* an education implies a philosophy—which is to say that philosophy and education are biconditionally connected:

$$\text{philosophy} <-> \textit{education} \quad <=> \quad \text{education} <-> \textit{philosophy}$$

The analysis of this proposed structure entails the delicate conceptual separation of truth and subject mentioned above. Insofar as a subject, for Badiou, is the 'finite part of a truth',[21] these concepts seem to be as intertwined as the physical notions of time and space, with which I am somewhat obscurely linking viz., philosophy as the *place* for Truth, education as the *time* of the subjects of truths. The methodological idea here is to perform something like a *conceptual fission*, in the hope that by separating what is seemingly inseparable, some useful theoretical energy will be released: once again, this tactic does not appear to be too inconsistent with the *noisy epistemology* method which I am following throughout this thesis.

$$\textit{philosophy} <-> \text{education} \quad <=> \quad \textit{education} <-> \text{philosophy}$$

---

20 By 'an education' I mean 'an educational system', or 'an educational framework'. From the perspective that I am trying to gain here, the term 'philosophy of education' seems doubly unhelpful: (1) it conveys the sense of education as a sub-discipline, and hence a subset, of philosophy, when what I am positing here is an equivalence (2) considering the notion of philosophical conditioning, referring to "philosophies of…" within a Badiouian framework is sightly incongruous,.
21 BE p. 523

(Truth)	<−|−>	(Subject)
place	<−|−>	*time*

What is posited in this scheme is that the Subject induced by Education is a praxial correlate of the philosophical *composite thinking* of the truths of its time: or, differently put, that an educational *Subject* is the *temporal* emanation of the *place* opened up by the philosophical category of *Truth*.

There is a double legitimation for this operation, coming from both the Freirean and the Badiouian sides of the argument. Freire, for his part, asserts that true pedagogical thought 'permanently "bathes itself" in temporality, the risks of which it does not fear'.[22] In putting the notion of temporality at the centre of education, Freire is not merely applying his avowed Bergsonism, but is here following the lead of his mentor, Pierre Furter, for whom the goal of consciousness-raising education should never be 'to eliminate the risks of temporality, by holding on to guaranteed space, but rather to temporalise space [*temporalisar o espaço*]'.[23]

As for the Badiouian authorisation for performing this conceptual split, I take it as given by the implied temporal dimension which emerges as the result of subjective praxis. As mentioned earlier in the discussion of Badiou's notion of 'subtraction', the fact that '[t]he subjective project is, itself, conceived as *the temporal unfolding of a 'truth'*[24] means that fidelity to an event prescribes a trajectory which drives the subject out of the isentropic atemporality of mathematical ontology into the entropic world of physico-phenomenal relations. And, to repeat once again, this is precisely the temporality buttressed by education.

---

22 '*"[B]anha-se" permanentemente de temporalidade cujos riscos não teme*', PO p.114.
23 Furter, *Educação e Vida*, pp. 26-7 (quoted in PO p. 115).
24 Fraser, 'The Law of The Subject', p. 94 (my emphasis).

The Double Hazard of Humanisation and Language

In the exposition of the educational theme, a new motif will gain in intensity: language—or, more specifically, language as a generic *condition* which will have made possible the process of *humanisation*. The latter notion is not only one at the centre of Freire's thought: it functions, I claim, as the operator of subjective fidelity within his philosophico-pedagogical system. It is at this point where the Badiouian notions of event, subject and truth need to become operative within the Freirean framework, rendering a praxial meaning to the pure speculative notion of 'an education by truths'.

And it is at this point too—precisely as a consequence of the Badiouian injunction—that a double hazard will be encountered: on one side, the danger of positing a notion of subjectivity too reliant on language—something which will be inconsistent with Badiou's clear distancing from both analytical and post-structural reliances on language; on the other side, the danger of hypothesising a primordial event, an inaugural singularity, foundational of humanity—something which, for Badiou, inevitably leads to the ruin of thought, a disaster of ethics and to 'evil' tout court.[25]

Although I will attempt the crossing of this dangerous strait in part III of this thesis, one can anticipate some of the helmsmaning[26] that will be required in order that our (Badiouian) subject retains some consistency as they navigate though the

---

25 A notoriously sinister example would be National Socialism's naming of a *Volksdeutsche* and its recourse to an ancestral fatherland, soil, blood, race and so on.

26 'The cybernetic metaphor of the "helmsman", writes Cécile Malaspina, 'cements a classical link between the art of navigation and the art of governing in the contemporary technical paradigm, dating back to the Platonic dialogues. Plato's *Alcibiades* dialogue is crucial in this regard, not only because of the importance given to the helmsman as metaphor for the art of governing, but also because of the injunction it makes against 'the most sickening' aspect of poor governance, which is the ignorance of one's own ignorance. (How could we fail to mention here that the etymology of noise leads back to the nautical field, i.e. *nausea*, or sea-sickness, completing the metaphorical analogy between noise and uncertainty.)' EN p. 213.

archipelagos of (Freirean) education. To ensure a safe passage, it must be posited that (1) they are indeed a subject *made possible* by language (2) language is, by itself, not enough: there needs to be some transformative process, triggered by an encounter with an event which hails from something *outside* of the language available to the subject (3) a truth is the forcing of this outside into language, and finally (4) education is purely at the service of such forcing.

In other words, the wager will be to keep in operation *some* notion of language as a structural *actuator* of the subject, whilst simultaneously holding on to the idea that an event is the sine-qua-non condition for the coming about of said subject— which means that that language upholding the subject *is always already incomplete*. Indeed, the subject is borne out in their following of an evental trace that, as Badiou writes, 'simply opens up a space of consequences in which the body of a truth is composed. As Lacan saw, this real point is strictly speaking senseless, and *its only relationship to language is to make a hole in it*'.[27] Education supports such piercing of sense, subsequently aiding in the transformation of its logic, so that it accommodates within it the newborn senselessness delivered from that hole.

All of which indicates the fact that education operates *at the threshold of noise*. And is able to do so only if conditioned by the notion of language briefly mentioned at the start of this introduction: as *condition of conditions*, operating as closely as possible to the (Lacanian, Badiouian) letter[28], albeit keeping a minimal distance from it. It is in the passage from letter to language that we find, precisely, the minimal difference between the philosophical place of Truth and the educational time of the Subject, in other words, the passage from letter to language echoes the schizductive translation passing from the (ontological) void to (phenomeno-logical) noise:

27 Badiou, LW p. 386, (my emphasis).
28 Or, what is the same thing, to the *matheme*.

philosophy	<=>	education
Truth	<−|−>	Subject
the void (∅)	—>	noise (η)
letter	—>	language

Throughout this chapter I will attempt to show that Freire's Pedagogy of the Oppressed can be reconfigured as a philosophical system wherein *humanisation*—split as *logical operator* and *event*—connects a subjective procedure of fidelity to said event—in an always unfinished process, conditioned by an always incomplete language—to the construction of a *generic subject of subjects*: the Subject of education.

I will first argue why I claim that Freire's name spells out a singularity, thought not an event. I will explore how Freire, (by following a phenomenological notion of *non-methodological method*) conceives of an educational praxis which is a materialisation of subjective consciousness and which drives both his conception of cultural action and cultural revolution, through the operation of *humanising dialogue* (a dialogue which, as we shall see, will always already be mediated by noise).

Next, I will proceed, firstly, by pointing out the connection that Freire draws out between his conception of 'curiosity'—via its sister concept, *conscientização*—to the immanent *unfinishedness* of the human subject. The challenge here will be to filter out any phenomenological residues from Freire's conception of subjectivity (still very much dependent of notions of consciousness and intentionality) in order to approximate it to the rather more structural subject we find in Lacan and Badiou.

The key assumption of this thesis equates philosophy and education, hence presenting them as a conjoined pair. After unveiling such a pair, I will then attempt the

delicate conceptual fission of splitting it: the result will be the theoretical appearance of a (temporal, educational) Subject separated from a (placed, philosophical) Truth.

I will then observe in detail the Freirean concept of humanisation itself: most importantly, I will show how, inasmuch as it is a system that involves a faithful commitment to the affirmation of humanisation as an event conditioned by language-thought and to the investigation of its consequences, the ethics implied in Freire's *Pedagogy of the Oppressed* can, in effect, be correlated with Badiou's ethics of truths.

2.1. The Freire Singularity

The Freire "event"?

Once we declare that the Freirean configuration is a *philosophical* system, then any talk of it being an event becomes meaningless, inasmuch as there are is no such thing as a "philosophical event". We either have education *as a truth procedure*, or education *at the service of the truth procedures*. Dennis Atkinson, however, seems to contradict this notion, when asserting that '[Badiou] provides examples such as the Galileo event in science, the Schoenberg event in music and the event of the French revolution in politics. Perhaps we might also think of the "Freireian event" in pedagogy'.[29]

This confusion might arise from the fact that Freire's thought brings about a *singularity*: the introduction of a generic operator of connection with an event (which, in Freire, takes the name 'humanisation'), and, as Badiou himself admits, this operator may appear itself as an event.[30] However, if any revolutionary force is to be extracted from its

29 Dennis Atkinson, 'The Event of Learning: Politics and Truth in Art and Art Education'<faeb.com.br> [accss. 2 Nov 2015], p. 4.
30 '[T]he operator of connection in fact emerges as a second event. If there is indeed a complete hiatus between [the event], circulated in the situation by the intervention, and the faithful discernment […] of

emancipatory potential, the Freirean pedagogical system should be treated, not as an event per se, but as a thought-singularity impelling us to develop the as-yet unexplored consequences, infinite and of universal value, of the true event—viz., humanisation.

The view of Freire-as-event might be the reason behind the misguided programmatic methodologisation of his thought, the idea that it is *it* which requires subjective interventions, connective operators and the rest of the subjective militance that a truth procedure requires. This could not be farther from Freire's insistence that a liberatory education must never degenerate into mere pedagogical methodology. A fidelity to a generic notion of humanisation—never to any particular methodology—is what provides his thought with a purely philosophical tone.

For Freire, the pragmatist instrumentality of methodologies implies the immanently neoliberal and irremediably reactionary concept of 'training'—and a mechanism that I am associating here with the knowledge of the state. For Freire, training is categorically opposed to education proper: 'purely pragmatic training, with its implicit or openly expressed elitist authoritarianism, is incompatible with the learning and practice of becoming a "subject"'.[31] This becoming, which should be taken in its full 'Bergsonian sense',[32] emerges as a result of an unfinishedness, an inconclusiveness that the subject needs to take on board for the educational journey to succeed:

what is connected to it, then we will have to acknowledge that, apart from the event itself, there is another supplement to the situation which is the operator of fidelity. And this will be all the more true the more real the fidelity is, thus the less close it is to the state, the less institutional' (BE p. 239).

31 Paulo Freire, *Pedagogia da Autonomia: Saberes Necessários à Prática Educativa*, 55th edn (São Paulo: Paz e Terra, 2017); published in English as *Pedagogy of Freedom: Ethics, Democracy, and Civic Courage*, trans. by Patrick Clarke, (Maryland, MD: Rowman & Littlefield, 1998), p 46 (pagination refers to the English edition); hereinafter PF.

32 'Education is constantly re-made in praxis. In order for it to be, it needs to become. It's "duration"—in the Bergsonian sense of the term—as a process, resides in the interplay of the opposites permanence-change (PO p. 101); c.f.: 'in order for it to be, the social structure needs to become; in other words: becoming is the mode that a social structure acquires in order acquire a "duration", in the Bergsonian understanding of the term [*estar sendo é o modo que tem a estrutura social de "durar", na acepção bergsoniana do têrmo*] (PO p. 245).

'[c]onsciousness of one's inconclusiveness makes that being educable. Unfinishedness in the absence of consciousness about it engenders *domestication* and *cultivation*. Animals are domesticated; plants are cultivated; men and women educate themselves'.[33] This operation of education is made impossible under the de-subjectivising mechanistics of 'training' and the substitution of praxis (implying the dialectics of reflection and action) by the instrumentality and measurability of methodology. It might be useful at this point, to recall Badiou's assertion that

> [i]deas, in their process of becoming within the disparate worlds, should be judged not by what determines the circumstances of their apparent failure in this or that sequence of history, but by the becoming, point by point, through their traversal of unforeseen new worlds, of their universal demands.[34]

The (false) dilemma implicit in the "success/failure" opposition, comes as a direct consequence of the empirical instrumentality with which the state invariably yokes education in order to rein in any attempt of the latter to challenge the hegemonic power of the former. Hence, one way out of such conundrum is for education to place itself conceptually beyond the particularities of methodology, and never let go of its 'universal demands'.

And, precisely, it was "beyond instrumentality" where Freire consistently placed himself. It was, nevertheless, a placement he needed to constantly clarify right till the very end— as he does during his last recorded interview, given in 1996: 'even if it should be for me a great honour to be understood as a specialist in "literacy", I have to say "no"' Freire

---

33 Paulo Freire, *À sombra desta mangueira* (São Paulo: Olho D'água, 1995); published in English as *Pedagogy of the Heart*, trans. by Donaldo Macedo & Alexandre Oliveira (New York: Continuum, 2000), pp. 93-4 (pagination refers to the English edition); hereinafter PH.
34 Alain Badiou, 'The Lessons of Jacques Rancière: Knowledge and Power after the Storm', *Jacques Rancière: History, Politics, Aesthetics*, ed. by Gabriel Rockhill & Philip Watts (Durham & London: Duke University Press, 2009), p.54.

gently reminds the *International Literacy Institute* interviewer, 'because my main preoccupation, since I started working 45 years ago, had to do with the critical understanding of education'.[35] The fact that Freire still felt the need to spell out his anti-positivism after half a century of work that proved it in actual facts, is yet another symptom that, by then, the subject of "Freire studies" had become—as Perry Anderson puts it in his analysis of Western Marxism (and Ian Buchanan echoes, regarding that other bloated field: "Deleuze studies")—'a prolonged and intricate Discourse on Method'.[36]

(Anti)method

Freire was categorically unambiguous right from the start: the only "method" allowed within a liberatory education is one which enables the re-humanisation of both educators and educands—tout court. As a consequence, method here is paradoxically subtracted from every pre-conceived notion of instrumental methodology. For Freire, this non-instrumental instrumentality is a sine qua non aspect of any revolutionary pedagogy. Indeed, '[i]n a humanizing pedagogy the method ceases to be an instrument by which the teachers (in this instance, the revolutionary leadership) can manipulate the students (in this instance, the oppressed), because it expresses the consciousness of the students themselves'.[37] Inasmuch as this consciousness is always in a process of becoming—as a result of the problematising dialogue between educator and educand—and method is a manifestation of consciousness, then the former is none other than a

---

35 Paulo Freire, 'A Conversation with Paulo Freire', *literacy.org* (30 Dec 2009), <https://youtu.be/aFWjnkFypFA>[accss. 19 Jun 2017], 2'05"-2'40".
36 Perry Anderson, *Consideration on Western Marxism*, (London: Verso, 1976), p. 53; Ian Buchanan, 'Schizoanalysis and the Pedagogy of the Oppressed', *Deleuze and Guattari, Politics and Education: For a People-Yet-to-Come*, ed. by Matthew Carlin and Jason Wallin (New York: Bloomsbury, 2014), pp. 1-14 (p. 3).
37 POe pp. 68-69.

dynamic materialisation of the latter's becoming. Freire is here following the lead of his mentor and friend Alvaro Vieira Pinto, whose militant phenomenology became a foundation stone in Freire's conceptual elaboration of *conscientização*. In a passage described by Freire as 'of the greatest importance in order to understand problematising education',[38] Vieira Pinto explains that 'method', in his conception,

> is, in fact, an external form, materialised in acts which are the manifestation of the fundamental property of consciousness: its intentionality. The essence of consciousness is being with the world—a permanent and unavoidable process. Therefore, consciousness is in essence "a way towards" something other than itself, outside of itself, and which surrounds it and apprehends it by means of its ideational capacity [*sua capacidade ideativa*]. Consciousness is thus, by definition, "method", in the most general sense of the word. Such is the root of method, and, equally, such is the essence of consciousness, which only exists qua abstract and methodic faculty.[39]

It is *only* in this generic, intentional (and, it must be added, deeply subversive) sense, that one must understand the notion of "method" within Freire's system. And when the tainted word appears in his writing, it is indeed deployed with this uncontaminated, purified signification. The only method as such is one that allows itself

---

38 PO p. 77.

39 Álvaro Vieira Pinto, *Ciência e Existência* (Rio de Janeiro: Paz e Terra, 1986, 2a ed), quoted in PO p. 77 (POe p. 69). Vieira Pinto was a seminal influence in Freire's early thought: not only the notion of 'limit situations' [*situações-limites*] is a direct borrowing from the former (see PO p. 82); Freire also acknowledges Pinto as co-creator of what later became the paramount Freirean concept: *conscientização*: 'I am generally credited as the author of this strange term, *conscientização*, on account of it being the central concept of my ideas about education. In truth, it was created by a team of professors at the *Instituto Superior de Estudos Brasileiros*, around 1964. One could cite philosopher Álvaro Pinto and professor Guerreiro amongst them. Upon hearing for the first time the word *conscientização*, I immediately perceived the depth of its meaning. This is because I am absolutely convinced that education, as the practice of freedom, is an act of knowledge [*é um ato de conhecimento*], a critical approximation to reality. Since then, this word has been part of my vocabulary' (Paulo Freire, *Conscientização: Teoria e Prática da Libertação, Uma Introdução ao Pensamento de Paulo Freire* (São Paulo: Cortez & Moraes, 1979), 'Segunda Parte: Alfabetização e Conscientizaçao: Filosofia e problemática: Visão do mundo'); for the influence of Vieira Pinto on Freire's thought, see for example Jose Ernesto Faveri, *Alvaro Vieira Pinto: Contribuiçoes à Educação Libertadora de Paulo Freire* (São Paulo: Liberars, 2014).

to be subject to a process of permanent becoming—or, to put it differently, *method is the emergent quality of any true cultural revolution*.

Indeed, for Freire, the revolutionary process of the Pedagogy of the Oppressed comprises two successive stages:

(1) a first stage of 'cultural action'—namely, 'problematising education' which, through a consciousness-raising dialogue by which 'the world of oppression' is unveiled and the oppressed 'commit, through praxis, to its transformation',[40] and therein the subjects (both educators and educands) are steered in the struggle for liberation—and

(2) a second stage of 'cultural revolution'—namely, a method for the education of the New Man: 'no longer oppressor, no longer oppressed, but a man liberate-ing [*homem libertando-se*][41] within a new society wherein the oppressing reality has been transformed and 'the pedagogy stops being of the oppressed and becomes pedagogy of men and women in a permanent process of liberation'.[42]

---

40 PO p. 57

41 PO p. 60. The Portuguese middle voice *homen libertando-se*, is translated by Myra Bergman Ramos as 'man in the process of liberation' (POe p.56). Inasmuch as Freire's use of the middle voice here is anything but trivial, the lack of intransitivity for the verb 'to liberate' in English, makes its original resonances awkward to render. Throughout *Pedagogia do Oprimido*, *libertar-se* has a very precise semantic diathesis with strong politico-philosophical intentionality: the heading (absent in the English edition) of the last section of Chapter 1 reads: 'no one liberates anyone, no one liberates (by) themselves: men liberate-themselves in communion [*ninguém liberta ninguém, ninguém se liberta sozinho: os homens se libertam em comunhão*] (PO p. 71). Freire later restates this exact same notion, adding a not insignificant qualification: granted, human beings can neither liberate themselves nor liberate someone else—they can, nevertheless, oppress someone else: '[i]n truth, regarding [the process of oppression], it is legitimate to say that someone oppresses someone else; we can no longer affirm, however, regarding [the revolutionary process], that someone liberates someone else, or that someone liberates (by) himself, but that *men liberate-themselves in communion* [*na verdade, enquanto [no processo opressor], é lícito dizer que alguém oprime alguém, [no processo revolucionário], já não se pode afirmar que alguém liberta alguém, ou que alguém se liberta sozinho, mas que* os homens se libertam em comunhão] (PO p. 179, my italics). Myra Bergman Ramos translates my above italicised quote as 'human beings in communion liberate each other' (POe, p. 133).

42 PO p. 57.

Having said all that, it is true that those working closest to Freire—and hence those most at risk of methodising the work—always went out of their way to make the above points clear. Henry Giroux, for example, asserts that Freire's system, rather than a pedagogical method, should be considered 'as part of a broader political practice for democratic change'; from the Freirean perspective, Giroux adds, critical pedagogy 'was never viewed as an a priori discourse to be reasserted or a methodology to be implemented, or for that matter a slavish attachment to knowledge that can only be quantified'; according to Freire, 'pedagogy could never be reduced to a method' and so, Giroux concludes, '[a]ny pedagogy that called itself Freirean had to acknowledge the centrality of the particular and contingent in shaping historical contexts and political projects'.[43] Failing to go unnoticed, a chapter in Moacir Gadotti's *Reading Paulo Freire* is discordantly titled 'The Method Which Took Paulo Freire into Exile': identifying the incongruity, Gadotti promptly clarifies in a footnote that 'I must add that the development of the method which is presented here is no more than a possibility as, in Paulo Freire's proposal (a dialectical method), there is no rigid and inflexible sequence or methodological absolutes'.[44] Peter McLaren and Peter Leonard, for their part, write that 'Paulo Freire's thought and work is revolutionary, but continuously in danger of being domesticated, as many authors suggest, by the "progressives" in Western cultures, into mere methodology'.[45] One of these 'many authors' could be Jones Irwin, who, for example, observes that

---

43 Henry Giroux 'Prologue: The Fruit of Freire's Roots', *Paulo Freire's Intellectual Roots: Toward Historicity in Praxis*, ed. by Robert Lake & Tricia Kress (London & New York: Bloomsbury, 2013), pp. ix-xxi (pp xvii-xviii).

44 Moacir Gadotti, *Reading Paulo Freire: His Life and Work* (New York: State University of New York Press, 1994), p.164 n.1.

45 Peter McLaren and Peter Leonard, 'Editors' Introduction', *Paulo Freire: A Critical Encounter*, ed. by Peter McLaren and Peter Leonard (London & New York: Routledge, 1993), pp. 1-7 (p. 3).

Freire's philosophy of education and of literacy was never intended as a method. The fact that it has been so taken is part of the very system of education and politics (in effect, a positivism) which he criticizes. However, this is not how Freire's work should be deployed and he is unequivocal on this.[46]

All of this is undoubtedly a symptom of what Stanley Aronowitz aptly calls a 'method fetish', prevalent in the North American educational system.[47] Even if someone of the calibre of Jonathan Kozol cannot help himself referring to Freire's 'brilliant methodology' on the cover-comment of the US edition of *Pedagogy of the Oppressed*, Freire, as Aronowitz points out, was neither a Brazilian 'master teacher', akin to a Latin version of John Dewey, nor should his pedagogy be conflated with 'the traditional notion of teaching',[48] Rather, Aronowitz continues,

> it is to the liberation of the oppressed as historical subjects within the framework of revolutionary objectives that Freire's pedagogy is directed. The "method" is developed within a praxis, meaning here the link between knowledge and power through self-directed action. And contrary to the narrow, specialized methodologically oriented practices of most American education, Freire's pedagogy is grounded in a fully developed philosophical anthropology, that is, a theory of human nature, one might say a secular liberation theology, containing its own categories that are irreducible to virtually any other philosophy.[49]

Aronowitz' compelling quote effectively manages to separate, in a single assertive blow, the three constitutive pieces of the Freirean assemblage: education, philosophy and

---

46 Jones Irwin, *Paulo Freire's Philosophy of Education: Origins, Developments, Impacts and Legacies* (London & New York: Continuum, 2012) p. 45.

47 Stanley Aronowitz, 'Paulo Freire's Radical Democratic Humanism', *Paulo Freire: A Critical Encounter*, ed. by Peter McLaren & Peter Leonard (London & New York: Routledge, 1993), pp. 8-24 (p. 8). Arguably, a 'method fetish' is prevalent in the educational system of the UK as well.

48 Ibid. pp. 8-9.

49 Ibid. p 12. As for the Freirean notion of 'praxis' mentioned by Aronowitz's, it seems fully concordant with Ernani María Fiore's observation, in his introduction of the original edition of PO (absent in the English translation), that 'true critical reflection originates and is dialectised in the interiority of the constitutive "praxis" of the human world; furthermore, it is itself, also "praxis"' (PO p. 20).

praxis. This harks back to Freire himself, when kindly refusing the label "teacher" during the interview quoted at the start, explaining that 'the more I think of what I did and of what I proposed, the more I understand myself as a thinker and a kind of epistemologist proposing a critical way of teaching'.[50]

And there, effectively, we have it again: the founding triad—thought, education, praxis—straight from the horse's mouth.

Freire's alpha and omega

If we rewind a quarter of a century back from that last public statement, we find Freire's opening line in his first ever important publication in English, *Cultural Action for Freedom*, published in 1970. This inaugural sentence consists of—this is his own view—the stating of a truism: '[a]ll educational practice implies a theoretical stance on the educator's part. This stance in turn implies—sometimes more, sometimes less explicitly—an interpretation of man and the world'.[51]

This is, then, Freire's alpha-omega idea: an educator implies, by necessity, a philosopher (and vice versa). And the very fact that this is a truism that needs re-stating, since 'experience teaches us not to assume that the obvious is clearly understood', makes such an (immanently pedagogical) statement itself into a purely philosophical act—one which doubtlessly would not be subject to Badiou's objection.[52]

In spite of (because of) all that, it would seem that the truism needs to be spelled out clearly, yet again: Freire's is a less a pedagogical theory than a configuration of thought—a philosophical system, tout court.

---

50 'A Conversation' 3'10"-3'47"
51 CAF p. 13.
52 'Philosophy does not accept dominant names without a critical examination irrespective of how commonly held they are' (Alain Badiou, *Polemics*, trans. Steve Corcoran (London: Verso, 2006), p. 17)s.

2.2. Freire, For Today: Curiosity, Temporality and Humanisation

'Eu quero ser reinventado'

One can hardly argue with the fact that much of the World Wide Web has become an online landfill of loud irrelevant noise: however, buried amongst piles of virtual waste and psychotic redundancy, one can find the beautifully placid YouTube video of Freire's last public interview mentioned earlier.[53] Conducted in 1996 during the "World Conference on Literacy" at Penn University,[54] the serene recording shows a septuagenarian Freire reflecting on his philosophical and educational journey, sharing memories of a militant lifework extending for more than half a century: 'I am now almost 75 years old' observes Freire in his sweet, Pernambucan-infused English—after explaining, probably for the umpteenth time, his renowned views on literacy, language, power, and the like—,

> and sometimes, when I am speaking like now, I am listening to Paulo Freire 40 years ago. Maybe you could ask me "but Paulo, look, then you think that you did not change?" No, I change a lot, I change every day. But, in changing, I did not change, nevertheless, some of the central nucleus of my thought'.[55]

Freire ceaselessly requested that his ideas be constantly questioned, challenged, tested, and if necessary, reformed, adapted and recomposed: his desire to be 'reinvented' was explicit—something which, ultimately, comes as the logical consequence of his

---

53 Paulo Freire, 'A Conversation with Paulo Freire'.
54 Organised by the "International Literacy Institute" and hosted by Penn's "Center for African Studies". See: <http://www.africa.upenn.edu/Current_Events/Ncal_conf.html> [accessed 19 Jul 2017].
55 'A Conversation', 5'55".

inveterate belief in the ontological 'unfinishedness' [*inconclusão*] of the human subject.[56]

Such structural open-endness in Freire's thought is something that has been reiterated by each and every one of his numerous friends and collaborators: Peter MacLaren for example, would asseverate that

> there is always something new to be said about Freire's writings because there is always something new to be said about the world and our relationship to it. It is fundamentally and necessarily unfinished because the project that animated his work was the struggle for human liberation.[57]

Antonia Darder, for her part, recalled how 'Paulo often spoke of reinventing his work, that it wasn't about us taking exactly what he had done, but for us to understand the essence of what he had done'.[58] Hence, the task 'for those interested in social and economic justice and the role played by education'[59] is, once again, to reinvent Freire: remaking his thought is required if one is to remain faithful to it.

However, one might also read in Darder's account a veiled caveat: in order to properly perform such reinvention, it is imperative that 'the essence' of his work be comprehended.

I will thence put forward a first overarching postulate, one which could be stated as follows: *if* Paulo Freire's philosophy is to be (re)claimed as a viable educational force to be deployed in the emancipatory struggles relevant to our contemporaneity, if its

56 See: 'Paulo Freire: "Eu quero ser reinventado"' and Gadotti, *Paulo Freire: uma biobibliografia*, p. 298. As I will discuss in more detail later on, Freire's concept of 'unfinishnedness [*inacabamento*, *inconclução*] has deep Bergsonian roots: already present in PO (see pp. 101-102), Freire will revisit the idea two decades later in his two final works: PH pp. 93-94 and PF pp. 54-55.
57 Peter McLaren, 'Afterword', *Paulo Freire's Intellectual Roots*, pp. 231-36 (p 232).
58 Antonia Darder, 'Reflections on Paulo Freire & Critical Pedagogy Today' <https://youtu.be/vWymsfBKjlU> (15 Jun 2015), [accss. 31 Jul 2017], 6'05"; see also: Antonia Darder, *Reinventing Paulo Freire: A Pedagogy of Love* (Boulder, CO: Westview Press, 2002).
59 McLaren, 'Afterword', p. 232.

reinvention—which, once again, is an immanent aspect of the system, explicitly demanded by Freire himself—is to have any potency today, *then* identifying this 'central nucleus' of his thought, this dharmic core of permanence which threads through the impermanence of his oeuvre, is an unavoidable task. My main aim in this chapter is to identify such a core and to disentangle its manifold fabric.

In the process of developing the above statement, I will be guided by the three interlinked postulates mentioned earlier: (1) that the 'core' or 'central nucleus' of Freire's thought is commensurable with Badiou's notion of *subjective fidelity* to an *event* (2) that the operator of subjective fidelity within Freire's system takes the name 'humanisation' (3) that education induces the most generic subject possible.

But first—and as indicated above—in order to properly perform this reconfiguration, the unavoidable prerequisite is to find, within Freire's system, that much-vaunted place wherein the 'central nucleus' of his thought is located.

Paulo's curiosity

Some clues to the location of the Freirean 'essence' are hinted at in the interview quoted above. They resonate in the opening and closing refrains with which Freire punctuates the conversation: namely, the theme of *curiosity*. Indeed, the film begins with Freire self-defining his own being-in-the-world: 'I would say to you that I am a curious being. I have been a curious being'.[60] And, likewise, towards the end of the interview, Freire closes the dialogue by bringing back the same motive in the somewhat poignant observation that 'I was a curious boy and I am a curious old man. That is, my curiosity never stops. Maybe, now I am curious about what it means to die.'

Curiosity defined Freire the boy, remained the main drive in Freire the man, and

---

60 'A Conversation' 0'20"

keeps determining Freire the elder as he contemplates the path travelled and the end of the journey. In the last book published in his lifetime, *Pedagogia da Autonomia* of 1996, Freire touches 'once again'

> on the question of the unfinishedness of the human person, the question of our insertion into a permanent process of searching. In this context I explore again the problem of ingenuous and critical curiosity and the epistemological status of curiosity. It is also in this sense that I insist once again that education (or "formation" as I sometimes call it) is much more than a question of training a student to be dexterous or competent.[61]

We have in this short paragraph a first glimpse of the conceptual knot I intend to untie here, three of its most important strands clearly exposed: 'unfinishedness'—as an ontological condition of Nature—,'training'—as opposed to education—, and 'curiosity'—which appears in three guises: 'ingenuous', 'critical' and 'epistemological'.

Marvel, *thaumázō (θαυμάζω), curiositas*

Curiosity and its incidence on something like the emergence of human subjectivity is not, of course, Freire's own invention. It is a notion that in the Western tradition can be traced back to Plato's *Theaetetus*, where we will find Socrates speaking of 'wonder', or 'marvel' [*θαυμάζω*] as a condition for philosophical enquiry;[62] the idea is then echoed by Aristotle in the *Metaphysics*, though it is here compounded with the issue of *knowledge for knowledge's sake.*[63] Such a view is then questioned by St Augustine who, by way of

---

61 PF, pp. 21-22.
62 'For this feeling of wonder [*τὸ θαυμάζειν*] shows that you are a philosopher, since wonder is the only beginning of philosophy.' Plato, *Theaetus*, 155d.
63 'It is through wonder [*διὰ γὰρ τὸ θαυμάζειν*] that men now begin and originally began to philosophize; wondering in the first place at obvious perplexities, and then by gradual progression raising questions about the greater matters too [...]. Now he who wonders and is perplexed feels that he is ignorant (thus the myth-lover is in a sense a philosopher, since myths are composed of wonders) [*μῦθος σύγκειται ἐκ*

confessing his own 'vain curiosity', cannot clearly discern it as a value or a *'poison'*, and somehow positing as a hazard.[64] Curiosity, unbridled enquiry unchecked by God, now poses a real danger: such fear is undoubtedly behind Aquinas' apprehensive need, almost a thousand years later, to distinguish between 'curiosity' and 'intellectual knowledge' [*cognitionem intellectivam non possit esse curiositas*].[65]

Clearly though, it is Thomas Hobbes' account which brings back the humanising value of curiosity—a position which very much resembles Freire's own contemporary usage.[66] Curiosity for Hobbes appears, as much as it does in Freire, as a symptom of humanisation: it is, for the former, a '[d]esire, to know why, and how'

> such as is in no living creature but *Man*: so that Man is distinguished, not onely by his Reason; but also by this singular Passion from other *Animals*; in whom the appetite of food, and other pleasures of Sense, by prædominance, take away the care of knowing causes; which is a Lust of the mind, that by a perseverance of delight in the continuall and indefatigable generation of Knowledge, exceedeth the short vehemence of any carnall Pleasure.[67]

The fact the Hobbes ties desire and curiosity into something like a human singularity, renders his account strongly resonant, not only with Freire, but with the whole thread *void-noise-anxiety-humanisation-education* that I am pursuing here.

θαυμασίων]; therefore if it was to escape ignorance that men studied philosophy, it is obvious that they pursued science for the sake of knowledge, and not for any practical utility.' Aristotle, *Metaphysics*, 1.982b

64 'This malady of curiosity is the reason for all those strange sights exhibited in the theater. It is also the reason why we proceed to search out the secret powers of nature—those which have nothing to do with our destiny—which do not profit us to know about, and concerning which men desire to know only for the sake of knowing' (Augustine, *Confessions,* trans. by Albert C. Outler (Philadelphia: Westminster Press, 1955) Ch XXXV, no. 55; see also Ch. XXXVI, no. 58.

65 St. Thomas Aquinas, 'Of Curiosity', *The Summa Theologica*, trans. by Fathers of the English Dominican Province (Cincinatti, O: Benziger Bros., 1947), 2nd part of the 2nd part, Q 167.

66 For a critical insight of Freire's notion of curiosity, see Tyson E. Lewis, 'Teaching with Pensive Images: Rethinking Curiosity in Paulo Freire's Pedagogy of the Oppressed', *The Journal of Aesthetic Education* 46:1 (2012), pp. 27-45, doi:10.5406/jaesteduc.46.1.0027.

67 Thomas Hobbes, *Hobbes's Leviathan* (Oxford: Oxford University Press, 1909), p. 44.

Notable too, is the emphasis that Hobbes puts on the recursive property that curiosity presents: indeed, by being equal to the 'love of the knowledge of causes, [curiosity] draws a man from consideration of the effect, to seek the cause; and again, the cause of that cause; till of necessity he must come to this thought at last, that there is some cause, whereof there is no former cause, but is eternall; which is it men call God.'[68] The desire to know the cause of something iterates the desire to know 'the cause of that cause', inevitably leading the curious subject towards the vertigo of *both* paradox and infinity. In Hobbes' account, curiosity seems to be *recursive* and, as such, a foster of uncertainty, noise and anxiety. What happens with this vertigo, with this noisy feedback of curiosity when the subject no longer has—like indeed Augustine, Aquinas and Hobbes did—the soothing reassurance of God as a stopping point? Such is the not insignificant pastoral challenge inherited by an education by truths.[69]

Freire's typology of curiosity

As for Freire, if the notion of curiosity appears already fully matured in his last work—wherein, as mentioned above, we find it classified as either 'ingenuous', 'critical' or 'epistemological'—one can sense emerging an interest in curiosity already in the 1985 "conversational" book with Antonio Faundez,[70] Nonetheless, it is in *Cartas A Cristina* of

---

68 Ibid. p. 80.

69 Surprisingly enough, Hobbes is never directly referenced by Freire: there is evidence though, that the English political philosopher was indeed part of the Brazilian's reading list, at least as early as the late 40s. That much can be attested from Ana María Araújo Freire's 'Notes' in *Letters to Cristina*, where Hobbes' name appears in a 'handwritten record of 572 books' which Freire kept since 1942; Araújo notices 'that he began reading books in Spanish in 1943; in French in 1944; and in English in 1947; that is, if we assume that after the books' purchase, he read them'. Ana María Araújo Freire, 'Notes to the Tenth Letter', *Letters to Cristina*, pp. 225-27 (pp. 225-6); see also 'As Leituras do Jovem Paulo Freire' in *Biobibliografia*, p. 526.

70 Paulo Freire & Antonio Faundez, *Por uma pedagogia da pergunta*, (Rio de Janeiro: Paz e Terra, 1985). Also published in Spanish as *Por una Pedagogía de la Pregunta: crítica a una educación basada en respuestas a preguntas inexistentes*, trans Clara Berenguer (Buenos Aires: Siglo XXI, 2013).

1994 and in *À Sombra Desta Mangueira*, his penultimate work, published in 1995,[71] that the concept starts to receive a more thorough philosophical treatment. And notably, in the *Letters*, we first find the notion of an 'epistemological curiosity' appearing as a fundamental supplement to consciousness, hinting a possible connection between curiosity and *conscientização* (and hence implying a rather more critical, or even political function of the notion).

> Consciousness is a starting point. It is by becoming conscious of an object that I can account for it. Yielding to my curiosity, the object is known by me. My curiosity, however, before the world, which is "not-I," perceives the object without reaching an understanding of its reason for being. This curiosity, if it undergoes a transformation process, becomes what I call epistemological curiosity and may perceive not only an object but also the relationships among objects, allowing me to realize their reasons for being.[72]

And evincing the essential role that curiosity had found within his late thought, Freire returns to it in his final work, *Pedagogia da Autonomia* (1996). Significantly, this time it does show up now fully tied up with that other classical Freirean concept: *conscientização*, which itself reappears here, as Ana Cruz notes, after a 'prolonged period' of not being used.[73]

Just as *conscientização* had been subjected in his early 1970s writings to a comprehensive analysis by means of what Freire named an 'archeology of

---

71 Freire, *À sombra desta mangueira* (op. cit.).

72 Paulo Freire, *Cartas A Cristina: Reflexões Sobre Minha Vida e Minha Práxis* (São Paulo: Paz e Terra, 1994); published in English as *Letters to Cristina: Reflections on My Life and Work*, trans. by Donaldo Macedo with Quilda Macedo & Alexandre Oliveira (New York & London: Routledge, 1996), p. 182 (translation modified); pagination refers to the English translation (except for my commentary (see p. 266) of Adriano S. Nogueira's 'Preface' (absent in the English edition) and for which I have consulted the Spanish translation: *Cartas A Cristina: Reflexiones sobre mi vida y mi trabajo*, trans. by Stella Mastrángelo & Claudio Tavares Mastrángelo, 3rd edn (México, D.F.: Siglo XXI, 2008)).

73 Ana L. Cruz, 'Paulo Freire's Concept of Conscientização', *Paulo Freire's Intellectual Roots*, pp. 169-182 (p. 178).

consciousness', so is 'curiosity' now, in the mid 1990s, analogously dissected in a typology which clearly resonates with the earlier classification.

Archeology of consciousness: true thought, ingenuous thought

What we find in the early Harvard articles that became *Cultural Action for Freedom*—his first important work published in English—is the conceptual de-composition of *conscientização* as 'semi-intransitive', 'naive-transitive' and 'critical-transitive' consciousness.[74] This differentiation emerges, in Freire's analysis, as a function of the level of critical awareness that the people have with respect to an overdetermined historical-cultural reality in which they are more or less submerged. As Freire himself explains, the 'archeology of consciousness', which is 'one of the dimensions of the *conscientização* process' itself,

> implies only to invite men and women who are at the naive level of their consciousness, ideologised in a concrete reality in which they cannot express themselves, they cannot express the word, they don't *know that they can know*! To invite them in order to discover that it is possible for them to know precisely because men and women can know that they are knowing.[75]

Something like *an epistemological invitation* (never a coercion, nor an explanation) to the people to become aware of their socio-cultural-historico situation in particular, to embrace their 'unfinished' nature in general, and, in the process, to identify whatever violence is oppressing their 'ontological vocation' to 'be *more*'.[76] In other words, Freire, right from the start in his groundbreaking work of the 1970s, is taking to heart Frantz

---

74 CAF pp. 44-54. See also: *The politics of education: culture, power and liberation*, trans. by Donaldo Macedo (Basingstoke: Macmillan, 1985), pp. 71-81.
75 Paulo Freire & Rex Davis, 'Education for Awareness' p. 61
76 See PO pp. 58, 71, 85, 101.

Fanon's belief that 'one has to help consciousness'.[77] And, in Freire's system, *dialogue* is the main aide supporting the *conscientização* process. Indeed, for Freire, inasmuch as it is the 'encounter of men to "pronounce" the world', dialogue is 'a fundamental condition for their real humanisation.'[78]

Ingenuous curiosity, epistemological curiosity

A quarter of a century later, the concept of 'curiosity' appears linked with conscientisation and is correspondingly de-composed. In a not dissimilar process to that with which Freire describes the process of *conscientização*, curiosity, which always starts as 'spontaneous', can (and should) progress from 'ingenuous curiosity' to 'epistemological curiosity', through a process of increased reflection, overseen by education:

> [t]o think correctly, in critical terms, is a requirement imposed by the rhythms of the gnostic circle on our curiosity, which, as it becomes more methodologically rigorous, progresses from ingenuity to what I have called "epistemological curiosity." Ingenuous curiosity, from which there results, without doubt, a certain kind of knowledge (even though not methodologically rigorous) is what characterizes "common sense" knowing. It is knowledge extracted from pure experience.[79]

We can thus see the both notions schematically thus:

consciousness (1970s):   semi-intransitive >>   naive-transitive >>   critical-transitive

curiosity (1990s):   spontaneous   >>   ingenuous   >>   epistemological

---

77 Frantz Fanon, *Los Condenados de la Tierra* (México DF: Fondo de Cultura Económica, 1963), p. 282.
78 PO pp. 184-5.
79 PF pp. 35-36.

However, unlike *conscientização*, there is no qualitative difference between such levels of curiosity, inasmuch as 'the difference and the distance between ingenuity and critical thinking, between knowledge resulting from pure experience and that resulting from rigorous methodological procedure, do not constitute a rupture but a sort of further stage in the knowing process'.[80]

Curiosity as a symptom of humanity

Curiosity is one of the fundamental strands in the Freirean philosophical topology. All of these strands interweave around the 'central nucleus' of Freire's thought, appearing alternatively as *conscientização*, critical awareness, unfinishedness, dialogue and cultural resistance (itself a double braid interlacing cultural action and cultural revolution). When put to work, the Freirean loom weaves a conceptual tapestry wherein *conscientização* is the process whence the becoming-subject, putting to full use their universal capacity for language/thought, allows an awareness of their immanent *unfinishedness* to emerge; the human animal's *ingenuous* curiosity passes into *epistemological* curiosity and thereupon their awareness becomes *critical* (and, therefore, subjective); this, in turn, will have triggered their natural resistance to any oppressive hindrance to the fulfilment of their unfinished potential—what Freire describes as their 'ontological vocation to be More'. And, once again, the *dialogue* prescribed by *problematising education* provides the (temporal) site for this encounter: 'dialogue is the encounter of men to *be more*.[81]

And threading through this whole conceptual plait, we find the 'human person'. It is worth quoting Freire *in extenso* on this point:

---

80 Ibid. p. 37
81 PO p. 114

I like being a human person [*gosto de ser gente*] because even though I know that the material, social, political, cultural, and ideological conditions in which we find ourselves almost always generate divisions that make difficult the construction of our ideals of change and transformation, I know also that the obstacles are not eternal.

In the 1960s, when I reflected on these obstacles I called for "conscientization," not as a panacea but as an attempt at critical awareness of those obstacles and their *raison d'etre*. And, in the face of pragmatic, reactionary, and fatalistic neoliberal philosophizing, I still insist, without falling into the trap of "idealism," on the absolute necessity of conscientization. In truth, conscientization is a requirement of our human condition. It is one of the roads we have to follow if we are to deepen our awareness of our world, of facts, of events, of the demands of human consciousness to develop our capacity for epistemological curiosity. Far from being alien to our human condition, conscientization is natural to "unfinished" humanity that is aware of its unfinishedness. It is natural because unfinishedness is integral to the phenomenon of life itself.[82]

Realstaunen*: Bloch's astonishment and the triggering of temporality*

In this sense, Freire's curiosity sounds not too dissonant with Ernst Bloch's notion of *Realstaunen*, an amazement, or astonishment, which nudges the subject out of their own ontological blind spot, and which Bloch strikingly terms 'the darkness of the lived moment'. If for Bloch the first 'awakening' of the subject happens as a 'convocation' in the enclosure of their 'secret Head'[83], and with no possibility of experiencing the present moment, the creative side of the Blochian *cogito* is riding on a questioning which points to a non-transcendental amazement, an astonishment flickering within the expanded,

---

82 PF p. 55

83 Ernst Bloch, *The Spirit of Utopia*, trans. by Anthony A. Nassar (Stanford: Stanford University Press, 2000), p. 247.

brightened darkness of hope.[84] This amazement, 'the most authentic of all emblems' jolts the subject into action, from its immanent darkness, to an urge of creative shaping and is true, in Bloch's view, of the 'greatest things.'

> Of the reverberations of ourselves in all great music, of the primordial experiences of great, dark poetry […]. What is felt, meant here is the same every time: our life, our future, the just lived moment and the lighting of its darkness, its all-containing latency, in the most immediate amazement of all.'[85]

Moreover, as Fredric Jameson explains, astonishment carries with it one of the most important of Bloch's conceptions: *anticipation*, '[f]or insofar as astonishment constitutes an implicit or explicit perception of the future concealed within that which exists, it already carries within itself a story line, the trajectory of the not-yet-finished, the struggle of the incomplete to free itself from the as-yet-formlessness of the present.'[86]

So here begins to loudly resonate, once again, the theme of temporality. Curiosity and amazement have naturally led us back to this *place of time*.

Curiosity, in Freire's philosophical configuration, is a symptom of humanity's ontological unfinishedness. Following its trace will lead us to the hard core at the centre of his system, to that nucleic philosophical strand which, albeit intertwined with a multi-variety of conceptual filaments attesting to his notorious eclecticism—itself a symptom of Freire's own unfinished philosophical becoming—kept unruffled, like an unchanged philosophical centre, firm and undisturbed.

---

84 Bloch, *The Spirit of Utopia*, p. 201; Amazement, for Bloch, is nothing other than the symptom of hope: 'so it seems, indeed it becomes certain, that this precisely is hope, where the darkness brightens. Hope is in the darkness itself, partakes of its imperceptibility, just as darkness and mystery are always related; it threatens to disappear if it looms up too nearly, too abruptly in this darkness. We tremble in hope, in amazement' (ibid.).
85 Ibid. pp. 193-4.
86 Fredric Jameson, *Marxism and Form* (Princeton: Princeton University Press, 1971), p. 124.

Curiosity is, once again, the symptom of humanity's becoming: a chronic symptom of an always-unfinished process of *humanisation*. And, what's more, curiosity in general, and children's curiosity in particular—as we shall see in part III—might very well have been the spark igniting our species' foundational event.

Most importantly, once we have underlined the link between curiosity and *astonishment-as-a-trigger-for-the-perception-of-time* in the subject, we can understand how the notion of curiosity finds its place at the core of one of Freire's key ideas: that temporality and education are inextricably interrelated.

Temporality in Freire

Granted, the above *curiosity-astonishment-temporality* passage is drawn utilising Bloch's *Realstaunen*, which brings with it a noticeable dissonance: Bloch's conception of time is explicitly Husserlian and adamantly anti-Bergsonian. Indeed, in a striking consonance with Badiou's criticisms of the post-Deleuzian, anarcho-desiring Spinozism (very much in vogue during these past decades),[87] for Bloch, Bergson's *élan vital* has no other function than its own duration, its empty search for novelty for novelty's sake: '[e]ven the duration of a thing, the *durée* which is imagined as being fluid, is based by Bergson on continual difference'; the radically new, in Bergson, 'is not elucidated by its path, its explosions, its dialectic, its images of hope and genuine products, but in fact repeatedly […] by the contentless declaration of an élan vital in and for itself.'[88] From Bloch's Husserlian perspective, if a 'love for the Novum' is indeed active in Bergson, 'the process

---

87 See for example Alain Badiou, 'The flux and the party: in the margins of *Anti-Oedipus*' (1976), *Polygraph* 15:16 (2004), pp. 75-92 and *Polemics*, p. 44.

88 Bloch, Ernst, *The Principle of Hope, Volume 1* (1954), trans. by Neville Plaice, Stephen Plaice & Paul Knight (Cambridge, MA: MIT Press, 1986), p. 201.

remains empty and produces nothing but process' a situation which achieves 'a mere frenzy instead of the Novum, precisely because of the constantly required change of direction, required for its own sake'; a zigzag, not a curve, sheer opposition to uniformity which produces only chaos. Ultimately, Bloch's damming conclusion is that 'there is absolutely no genuine Novum in Bergson; he has in fact only developed his concept from sheer excess into capitalistic fashion-novelty and thus stabilized it; elan vital and nothing more is and remains itself a Fixum of contemplation.'[89]

What seems to be emerging from Bloch's scathing criticism is a fracture between, on one side, a Husserlian conception of time, which, whilst it is explicit in Bloch, is likewise—I claim—*implicit in Badiou* and, on the other, a vitalist, Bergsonian conception of temporality, which is still somehow present in Deleuze's *Aion*. The point to underline here is the following: granted, much has been said about the differences between Badiou and Deleuze's ontologies—not the least by Badiou himself. Their radically differing conceptions of temporality, however, have not been sufficiently analysed (neither has, for that matter, the Husserlian DNA in Badiou). What I am suggesting is that the Husserl/Bergson schism, that Bloch identified in their respective notions of time, is at the root of the Badiou/Deleuze one. And, after all, Badiou hints in this same direction when he admits that Deleuze's 'canonical references (the Stoics, Hume, Nietzsche, Bergson…) were the opposite of my own (Plato, Hegel, Husserl).'[90]

All of which could bring with it a possible inharmonicity to the Freire-Badiou bridge, insofar as Freire's notion of temporality is Bergsonian through and through. My response to this is, of course, that if such inharmonicity will have brought an element of noise, I will then include it in the structure of said bridge (as any engineer knows very

89 Ibid. pp. 201-2
90 Alain Badiou, *Deleuze: The Clamor of Being*, trans. by Louise Burchill, (Minneapolis, MN: University of Minnesota Press, 2000), p.1.

well, harmonicity can, in fact, be fatal for bridges).

The fact remains that, pace all of the above, *duration* is a notion dear to Freire. His use of the term is the main indication that, for Freire, *education is inseparable from temporality*: '[e]ducation is constantly re-made in praxis. In order for it to be, needs to become. It's "duration"—in the Bergsonian sense of the term—as a process, resides in the interplay of the opposites permanence-change'.[91] Crucially, for Freire duration also involves a socio-political dimension.: 'in order for it to be, the social structure needs to become; in other words: becoming is the mode that a social structure acquires in order acquire a "duration", in the Bergsonian understanding of the term.'[92]

As Bergson himself explains, 'pure duration'

is the form which the succession of our conscious states assumes when our ego lets itself *live*, when it refrains from separating its present state from its former states. For this purpose it need not be entirely absorbed in the passing sensation or idea; for then, on the contrary, it would no longer *endure*. Nor need it forget its former states: it is enough that, in recalling these states, it does not set them alongside its actual state as one point along side another, but forms both the past and the present states into an organic whole, as happens when we recall the notes of a tune, melting, so to speak, into one another.[93]

Such is the account of duration which would be given by a being who was ever the same and ever changing, and who had no idea of space [...] in a word, we project time into

91 Freire, PO p. 101.
92 [*estar sendo é o modo que tem a estrutura social de "durar", na acepção bergsoniana do têrmo*] PO p. 245. C.f.: '"Duration" is a Bergsonian concept synonymous with real time: Bergson opposes it to the artificial or quantitative time of mathematicians and physicians, applying his concept of "duration" to characterise the permanence-change contradiction as a process permanently present in the seizing of reality. He considers duration-as-process the most important aspect of human life.' Paulo Freire, *Educación y cambio*, (Buenos Aires: Búsqueda-Celadec, 1976) p. 15 n. 7.
93 Henri Bergson, *Time And Free Will: An Essay on the Immediate Data of Consciousness*, trans. by Frank Lubecki Pogson (London: George Allen & Unwin, 1910) p. 100.

space, we express duration in terms of extensity, and succession thus takes the form of a continuous line or a chain, the parts of which touch without penetrating one another.[94]

In a word, pure duration might well be nothing but a succession of qualitative changes, which melt into and permeate one another, without precise outlines, without any tendency to externalize themselves in relation to one another, without any affiliation with number: it would be pure heterogeneity.[95]

How does Freire operate this becoming? How can the 'pure heterogeneity' of Bergson *durée* become pedagogic, critical, emancipatory? How is one to avoid 'an élan vital in and for itself', an empty process producing 'nothing but process' required 'for is own sake'? Freire's answer is to subjectivise pure duration through the praxis of dialogue.

Dialogue, true thought and the temporalisation of space

It has become clear by now that dialogue—'the fundamental condition of humanisation'—is one of the main operators in Freire's configuration. However—and this is a crucial caveat—'[t]here is no true dialogue if there is no true thought'.[96] In Freire's conception, true thought is one that 'perceives reality as a process, as a continual becoming and not as something static'.[97] Moreover, Freire adds that true thought

---

94 Ibid. p. 101.
95 Ibid. p. 104. Deleuze for his part, explains that '[p]ure duration offers us a succession that is purely internal, without exteriority; space, an exteriority without succession (in effect, this is the memory of the past; the recollection of what has happened in space would already imply a mind that endures). The two combine, and into this combination space introduces the forms of its extrinsic distinctions or of its homogeneous and discontinuous "sections," while duration contributes an internal succession that is both heterogeneous "and" continuous'; see Gilles Deleuze, *Bergsonism*, trans. by Hugh Tomlinson and Barbara Habberjam (New York: Zone Books, 1991), p. 37.
96 PO p. 114.
97 Ibid.

'permanently "bathes itself" in temporality, the risks of which it does not fear'.[98] As such, it stands in opposition to 'ingenuous thought' [*pensar ingênuo*], which, on the contrary, collapses under the weight of 'historical time', and as a result its subjective temporality is normalised into the static place of a 'well behaved present'. As Freire himself puts it, '[f]or ingenuous thought, the important thing is accommodation to this normalised today. For critical thought, it is the permanent transformation of reality, on behalf of the permanent humanisation of men'.[99]

Freire presents here a key notion: the idea that the development of consciousness—from naive to critical—involves embracing 'the risks of temporality'. It is an idea borrowed from Pierre Furter, whom Freire extensively references throughout his early work: for Furter, the goal of consciousness-raising education should no longer be 'to eliminate the risks of temporality, by holding on to guaranteed space, but rather to temporalise space [*temporalisar o espaço*]'; in this way, Furter continues, 'the universe does not reveal itself to me as space, imposing itself as a massive presence to which I can only adapt, but as a field, as a domain which takes its form according to my action'.[100] The goal of ingenuous thought, Freire claims, is precisely to hold on to that 'guaranteed space', whereby 'adjusting to it, and negating temporality, it negates itself.'[101]

Not to fear the 'risks of temporality': there is here a clear summons to something like a *subjective courage*, required to confront whatever temporality bears: unpredictability, uncertainty, entropy, *noise*. Exercising this courage requires the letting-go of a

---

98 '"*[B]anha-se*" *permanentemente de temporalidade cujos riscos não teme*' PO p.114.
99 PO, p. 115.
100 Furter, *Educação e Vida*, pp. 26-7. The importance of Pierre Furter's influence is oddly overlooked within Freire studies. And not only with respect to the utopian aspects of Freire's system: few scholars seem to mention that the (by now seminally Freirean) concept of 'banking education', was, likewise, borrowed from Furter. See Julio Barreiro's introduction to the Spanish edition of *Educação Como Prática da Liberdade*: Julio Barreiro, 'Educación y concienciación', in *La Educación como Práctica de la Libertad* by Paulo Freire, trans. by Lilién Ronzoni (Montevideo: Tierra Nueva, 1969) pp. 7-19 (p. 16).
101 PO, p. 115.

'guaranteed space' of knowledge, and experimenting with/in the subjective, negentropic time of the truth procedure.

Humanisation ≠ **Ereignis**

Freire repeatedly made it clear that the object of his investigation had never been 'the persons', reduced to 'anatomical fragments […] but rather the thought-language with which men and women refer to reality, the levels at which they perceive that reality, and their view of the world'.[102] On that account, ringing as an overtone of my second guiding postulate—to wit, that in Freire's philosophical system the subjective fidelity to a *generic* notion of the anthropogenic event is conditioned by language and operates under the name of *humanisation*—we can pick up a tingling resonance with Badiou:: 'all humanity has its root in the identification in thought [*en pensée*] of singular situations.'[103]

From this emerging perspective, however, Freire's humanisation does seem to awkwardly share its evental starting point less with Badiou than with the Heideggerean *Ereignis*. However, fundamental (ethical) differences appear in the subsequent trajectories of the concepts. In fact, Freire's humanisation draws a vector of subjectivity pointing in a diverging, if not opposite, direction than Heidegger's event. The distancing is twofold: firstly, unlike *Ereignis*, which is 'not subject to human calculation',[104] Freirean humanisation shows no structural resistance to science, allowing—as we shall see— for a conceptual cross pollination with both the biolinguistic programme of Noam Chomsky and the subtractive mathematical ontology of Badiou. Secondly, the Freirean 'word' is

---

102 POe, p. 97.

103 Badiou, E p. 16.

104 'Yet propriation is not subject to human calculation; it is rather what is sent as the historical destiny of mortals'; see David Farrell Krell in Martin Heidegger, *Basic Writings*, trans by David Farrell Krell (London: Routledge, 1993), p. 396. 'Propriation' is Farrell Krell's translation of *Eirignis*.

not inherently failing, originally escaping 'as the hint and the onset of be-ing',[105] within a 'withdrawal' of thought which defines *Eirignis*:[106] much to the contrary, in Freire, the 'word', *as long as*—and this is an all-important qualification—*it is a true word*, is an affirmation of the primordial event of humanisation.

In fact, Freire's 'true word' seems much closer to Agamben's notion of the 'oath' than to the Heideggerian event. In this respect, Agamben's hypothesis is that

> the enigmatic institution, both juridical and religious, that we designate with the term *oath* can only be made intelligible if it is situated within a perspective in which it calls into question the very nature of man as a speaking being and a political animal. […] Ultrahistory, like anthropogenesis, is not in fact an event that can be considered completed once and for all; it is always under way, because *Homo sapiens* never stops becoming man, has perhaps not yet finished entering language and swearing to his nature as a speaking being.[107]

Loudly resonating in Agamben's lines we can hear not only Freire's 'true word' but, crucially, its *conditioning* of the immanent 'unfinishedness' of the human*ising* subject.

Furthermore—and most important of all—in Freire, true *saying* carries the potential of sparking the subject into creative action: 'insofar as language is impossible without thought, and language and thought are impossible without the world to which they refer,

---

105 Martin Heidegger, *Contributions to Philosophy (From Enowning)*, trans. by Parvis Emad & Kenneth Maly (Bloomington, IN: Indiana University Press, 1999), p. 26. Emad and Maly, for their part translate *Eirignis* as 'enowning'.

106 For Heidegger, the event is the 'withdrawal' of thought, not its advent (See *Basic Writings* p. 374). *Ereignis* appears as the 'owning' which 'bestirs in the showing of saying', and '[o]wning conducts what comes to presence and withdraws into absence in each case into its own' (ibid p. 414).

107 Giorgio Agamben, *The Sacrament of Language: An Archaeology of the Oath*, trans. by Adam Kotsko (Stanford, CA: Stanford University Press, 2011), p. 11. Agamben here borrows the term 'ultrahistory' from Georges Dumézil; see Georges Dumézil, *Mythe et épopée 3: Histoires romaines* (Paris: Éditions Gallimard, 1981), p. 14.

the human word is more than mere vocabulary—it is word-and-action' [*palavração*].[108]

Essentially, Freire is here reanimating a crucial idea: the connection of *truth* to the subjective nature of the speech act. *Palavração* is truth as a praxial process: speaking a *true word* is inseparable from a subjective creative *action*, and it is precisely for this reason that such act becomes itself a militant-political and an artistic-experimental one: 'to speak the word, in its true sense, is the right to self-expression and to express the world, to create and re-create, to decide, to choose. As such, it is not a privilege of a few with which to silence the majority'.[109]

We have here already the connection that Freire establishes between the subjective affirmation of the true word with *both* an aesthetic, creative realm and an emancipatory, political one. The Freirean speech act, in its guise as humanisation—i.e. conditioned by *the generic condition*, producing *a generic subject*—also touches on both the scientific and on the therapeutic/amatorial.

And with respect to science, once again: if for Heidegger it is at this precise point where science and language part ways,[110] the direction I will take—signposted by Chomsky and the latest paleoanthropological evidence—is the exact opposite. Furthermore, a purely scientific thinking of this Freirean notion of *humanisation-as-conditioned-by-language* will open up a singular site where Freire, Badiou and Chomsky might be permitted to meet.

---

108 CAF, p. 20. in Portuguese, *-ação* is a suffix which activates a noun (as in the English '-ation')—and commonly used throughout e.g. *problematização*, *alfabetização* etc.—; it is also, itself the noun "action": so a more literal, if somewhat unattractive, translation of *palavração* would be "wordation". *Palavração*, too, is the name for one of two analytic methods of literacy, or phonics—not necessarily associated with Freire's—which uses the word as a unit of meaning, distinguishing it from *sentenciação*, which uses the sentence (a method associated with Jacotot). What is important to note here is that, though the term *palavração* might as well have had existed prior to Freire's use of it, he certainly meant to semantically deconstruct it as a compound—something which the English translation, 'word-and-action', has, fortunately, picked up.
109 Quoted in Julio Barreiro, 'Educación y concienciación', p 16.
110 'Science in itself does not think' (*Basic Writings* p. 373)

It is imperative at this point, however, before proceeding forward—and so one may do justice to Freire's own desire and vocation—to step back and engage with the intricate topology that the conjoined couple philosophy/education present and to frontally tackle the complexity emerging from it. The analysis of such complex conceptual topology will require that one move its parts with the utmost care, whilst axiomatically deciding their location in the whole.

In other words, experimenting with something like a temporalisation of space without fearing the 'risks of temporality', is precisely what I intend to do next.

2.3. Reconfiguring Freire: the Place of Philosophy in Education, the Time of Education in Philosophy

Philosophy <=> Education

In essence, if we think of the philosopher/educator relation as an iterated function, then, like a pair of two-way mirrors facing each other, the two terms immediately fractalise into potentially infinite dimensions. The welcome webpage of the *Teachers' College* at Columbia University, bedrock of American progressive education, is not at all ambiguous with respect to the recursive nature of the philosophy/education couple:

> The Philosophy and Education program at Teachers College, Columbia University, centers around two closely related convictions:

> 1. that philosophical reflection and inquiry is indispensable for generating sound educational practice, and

2. that educational practice is indispensable for bringing philosophical reflection and inquiry to life.[111]

Whilst the above iteration seems valid, at this point we might need to accommodate within this emerging assemblage the (equally valid) Deleuzian assertion that 'philosophy is the art of forming, inventing, and fabricating concepts'.[112] If this is so, where is, then, the place of education *within* that operation? If we accept—as we do— the philosophical notion of Truth, where is, in turn, the place of Truth *within education*?

If—as Badiou establishes—philosophy is empty, and, as was made clear above, in Freire's conception education begins from the same foundation stone as philosophy, then accepting the fact that philosophy is conditioned from the outside will have inevitable effects on the thinking of education.

To put it differently, if philosophy implies an education (and vice versa), the sharing of this *axis mundi* will inevitably force consequences on each other.

If on the side philosophy, education does not produce truths

Education does not produce truths: this is the first and cardinal corollary of placing education on the side of philosophy and not on the side of the subject praxes. As already noted above, for Badiou '[t]he philosophical category of Truth is by itself *void*. It operates, but presents nothing. Philosophy is not a production of truth, but an operation *from* truths, an operation which disposes the "there is" of truths and their epochal compossibility'.[113] Philosophy itself, desutured from the truth procedures, neither determines their

---

111 See <http://www.tc.columbia.edu/arts-and-humanities/philosophy/>[accss. 20 Jul 2017]. Columbia's *Teachers' College* is strongly associated with John Dewey, who taught there for a quarter of a century; as of this writing, it counts Maxine Greene amongst its faculty.

112 Gilles Deleuze & Felix Guattari, *What is Philosophy?*, trans. by Graham Burchell and Hugh Tomlinson (London: Verso, 1994), p. 2.

113 Ibid. p. 124 (trans modified).

operation (there is neither aesthetics, nor political philosophy, nor philosophy of science—nor, for that matter, *of education*: in this schema there are no "philosophies *of*", period). Badiou insists on that term (borrowed from Leibniz): 'compossibility':

> [t]he contemporary complex of the conditions of philosophy includes […] post-Cantorian mathematics, psychoanalysis, contemporary art and politics. Philosophy does not coincide with any of these conditions; nor does it map out the totality to which they belong. What philosophy must do is propose a conceptual framework in which the contemporary compossibility of these conditions can be grasped.[114]

This, of course, immediately begs an urgent question: if education does not produce truths, what does, then, education *do*? (i.e.: What does education do as *different* from philosophy?) The answer requires one to perform a risky operation of separation, requiring (as with any attempt to separate that which is born conjoined) the utmost care. It is here that the surgical disunion of philosophy and education begins.

The place of Truth, the time of the Subject

My working answer to this question—what does education do that is not philosophy—is founded on what I have been referring to as the cardinal conjecture of this thesis, and it involves *thinking separately* the categories of Truth and Subject.

This splitting operation—performed in the context of a philosophical system (viz. Badiou's) wherein truth and subject are, likewise, born conjoined—is as hazardous as the separation of philosophy and education. The wager is that crucial conceptual energy, indispensable to thinking the relation between them (a relation at the heart of

---

114 Badiou, BE pp. 3-4.

both the Freirean and Badiouian projects), will be released by the split. The philosophical fission I intend to perform could be described along the following lines: if philosophy's concern is focused towards the *place* of *Truth*, education's concern is focused towards the *time* of the *Subject*.[115]

As noted earlier, there is a double authorisation for performing this split, both from the Badiouian and the Freirean sides.

With respect to the Freire, it seems clear by now that his thinking of education is inconceivable without a concurrent thinking of some notion of *duration*. And this is so to such a degree that education *requires*, firstly, the *temporalisation of space* and, secondly something akin to the courage to confront the risks involved in the production of temporality.

And with respect to the Badiouian orthodoxy, this move is not as outrageous as it might first sound—on the contrary, it is sanctioned from two interlinked postulates:

(1) Badiou's ontology is atemporal and isentropic and the subject procedure is, on the other hand—as Fraser reminds us—a 'temporal unfolding of a truth'.

> A subject's existence, as Badiou has it, is always temporal, and, beginning with an act of intervention that forms an indecomposable dyad with an event, consists in traversing an infinitely complex situation through an inexhaustible process that Badiou calls a *fidelity*. The business of a fidelity consists in performing a series of *enquiries* regarding the possible 'connections' that may or may not obtain between such and such an element of the situation (schematized as a set) and the event to which the subject seeks to remain faithful. A fidelity is said to be a *truth procedure* if the projected infinite subset of the

---

115 Which of course brings with it another conceptual hazard: the separation of time and place.

situation consisting of all the elements positively connected to the event will have been *generic*.[116]

For Fraser, 'in order to adequately think the essence of a fidelity, we must attend to its temporality', insofar as it is (as Freire would have it) an always already unfinished project, 'always in excess of its being'.[117]

(2) Badiou's ontology implicitly hints at this separation of time and place, insofar as the event is clearly *localised* (i.e. belongs in the situation), but has no temporality (is not *of* the situation). As Jean-Jacques Lecercle explains,

> [t]he event is situated in the situation, it has a site *in* it, but it is not *of* it, it does not belong, it is supplementary to it. It comes and goes in a flash (it has no proper duration: its temporality is the retroactive temporality of after-the-event; and yet, as we have seen, it interrupts and it founds), but it leaves traces, traces that allow an *encounter* with elements of the situation, who undergo a process of conviction, or conversion.[118]

That temporal process, I claim, is what should bear the name *education*: '[t]he Badiou event,' Lecercle continues, 'has a specific form of temporality: it occurs in a flash, and interrupts the time of the situation; but it also founds another time, the time of the inquest, of the process of truth and faithfulness'. Lecercle, however, adds a caveat: '[t]his is where it can go wrong, and where Evil comes in (the theory of Evil can be found in *L'Ethique*)'.[119]

And, precisely because this notion of a time-producing process is the common fundamental tone grounding both the Badiouian and the Freirean subjects, is why their

---

116 Fraser, 'The Law of the Subject', pp. 121-22.
117 Ibid. p. 122.
118 Lecercle, *Deleuze and Language*, pp. 109-10)
119 Ibid. p. 110

respective *ethics* so strongly resonate.

So—and to restate my conjecture in strictly Badiouian terminology—if philosophy organises a 'space of compossibility' for the truths of its time (in order to articulate the empty place of Truth), education organises a *time of compossibility* for the Subjects of said truths (in order to tend to the 'evental time' created by said subjects). Indeed, all subjective constitution requires what Badiou calls a 'discipline of time', a discipline on which the appearance of a new logic—the creative construction of a truth itself—depends upon:

> the event is only possible if special procedures conserve the evental nature of its consequences. This is why its sole foundation lies in a *discipline* of time, which controls from beginning to end the consequences of [the event]. I will call this organised control of time *fidelity*.[120]

Education intervenes as a minder of such discipline—as we will see, this intervention is in Freire operated through his conception of problematising dialogue (and is not unlike Jacotot/Rancière's 'method of the will').[121]

Admittedly, subjectivation is not a learning process, as Peter Hallward correctly points out,[122] but it could be that education is the *guardian* of a subjective process. So: if philosophy is the go-between, the procuress (in-thought) of the truth procedures,[123] education is the minder, the (in-the-flesh) escort of the *subjects* of said truths.

And so, education thus cares for the time produced through praxis by the

---

120 Ibid. p. 211.
121 'A person—and a child in particular—may need a master when his own will is not strong enough to set him on track and keep him there. But that subjection is purely one of will over will. It becomes stultification when it links an intelligence to another intelligence'. Jacques Rancière, *The Ignorant Schoolmaster: Five Lessons in Intellectual Emancipation*, trans. by Kristin Ross (Stanford: Stanford University Press, 1991) pp. 12-13.
122 Hallward, *Badiou*, p. 286
123 *Badiou*, HI p. 11.

subjects of truth: it is for this reason alone that the void (insofar as it is the ontological source of the event which galvanised the subject in the first place) needs to be thought of as *temporalised within educational praxis*; and, once again, it is this temporalised void what appears in the phenomenal world as *noise*.

Furthermore, and very interestingly for the sake of my argument, this subjective temporality already appears in the early Badiou of TS: '[t]he subject follows throughout the fate of the vanishing term, having the status of an interval between two signifiers, and which present it one to the other.'[124] This following of the 'vanishing term', this chasing of an escaping signifier within 'an interval' (an idea carrying unmistakeable temporal connotations), seems to strongly resonate with that *subject at the threshold of noise* that is posited here as the generic subject of education.

philosophy <−> education	<=>	*education* <−> philosophy
(Truth)	<−|−>	(Subject)
place	<−|−>	*time*
the void	—>	noise

Education names the most generic subject possible

From this (Freirean-Badiouian) perspective, education then becomes the seeing-eye for the temporal process undergone by an empty category: that of *the most generic Subject possible*. Neither a subject of science, nor of art, nor of politics, nor of love, but one that shares at least one element with each one of them. In other words, if philosophy prepares an always empty placeholder for Truth, education, then, prepares an always-empty *time*holder for the Subject. And exactly as with Truth, the Subject of education

---

124 TS p. 134

remains generic and indiscernible. Education intervenes by following the Subject in the trajectory of its truth: from the nomination of the event (it sides with the subject with regards to its undecidability), all the way to the forcing of the consequences of the event as Truth (reminding the subject that it needs to remain unnameable).[125]

Let us briefly recap here the figures of the subtractive. As already discussed in chapter 1,[126] the trajectory of a truth procedure is described by Badiou as a four-stage course:

(1) it starts with an *undecidable* event: education here wagers alongside the subject in their decision to declare, without any (statistic) guarantees whatsoever, that the event has indeed happened.[127]

(2) the *indiscernible*, related to the subject's evaluation of the event; the decision to declare the event is not guided by any law, it is unsupported by any norm of evaluation and 'principle of objectivity.'[128] Education can neither provide a Law, nor present itself as a proxy for the Law: what it *can* do is contain and support the *lack of a Law*: it here becomes a reassuring (and corrupting) voice, illegally injuncting the subject to "keep going".

(3) the generic, related to the subject's collection of the elements which belong to the (potentially infinite) truth being composed as a consequence of the event; education, unlike training, has no predicate: it is related to this unfinished process, which in the Freirean context takes the name 'humanisation'.

(4) unnameable, related to ethics: truth remains unnameable, and noise must be

---

125 See TW p. 110.
126 See p. 33.
127 'In order for the process of a truth to begin, something must happen. […] A truth arises in its novelty and every truth is a novelty—because a hazardous supplement interrupts repetition'; being 'indistinct', the event 'provides the basis for the undecidable' (C p. 122).
128 C p. 123.

allowed to *be noise*: education is a reminder that any truth, even when becoming information and knowledge, will always have hailed from the noisy side of epistemology (and, therefore, that there is a side of epistemology, an outside of its knowledge-defined border, that needs to always already remain noisy, uncertain, unpredictable).

	ethics	*translation*	education
event	undecidable	—>	wager on a wager
subject	indiscernible	—>	education is illegal
truth	generic	—>	un-finishedness
Truth	unnameable	—>	*noisy* epistemology

Now, a second corollary of placing education on the side of philosophy is, of course—considering that education does not *produce* truths—that strictly speaking *there can be no educational subjects per se*. Hence the need for this subject of education to remain *empty* and strictly *generic*. But a subject it is—one is tempted here to shadow Badiou's notation, viz.:

- there are (political, scientific, artistic, libidinal) truths (plural, lower case), there is a (philosophical category) *Truth* (singular, upper case).

- there are (political, scientific, artistic, libidinal) subjects (plural, lower case), there is an (educational category) *Subject* (singular, upper case).

And so we arrive at the juncture wherein—as already mentioned in the introduction to this chapter[129]—our educational *Subject of subjects*, meets with its double: namely, Frank Ruda's—likewise "illegitimate"— *philosophical* subject.

---

129 See subchapter 2.0, p. 57.

For Ruda, insofar as 'there are no philosophical subjects but there is a philosophical act that today has to take the form of the operation of forcing' and, at the same time, that we have to accept that there is 'no forcing without a subject that unfolds the consequences of a truth within a situation',[130] is a situation which brings about an unsurmountable impasse: namely, what to do when *nothing* happens. With no events to trigger subjective affirmation and action, such potential (and necessary) subjects of truth are impotent, left with no answer when confronted with *the* historical impasse: *what is there to do*? Ruda's important intervention has this precise purpose: to provide an answer to the fundamental question of how to remain (politically, artistically, scientifically, erotically) militant during non-evental times (a mark, undoubtedly, of our own contemporaneity).

> This is the reason why I want to suggest that from time to time, in exceptional times, but, maybe, always, there needs to be a philosophical subject—that is *a hypothetical subject*, *an anticipated subject* which holds the place open for a new political subject (but the same goes, as should be clear, for any condition in its absence). The philosophical subject is not a subject forcing knowledge into a situation but it produces a forced shift from the objective domain of knowledge into the subjective, or put differently: it takes the position of the very form of the subject (in the conditions).[131]

Such subject is neither a meta- nor a super-subject—which would be disastrous: in fact, and as briefly discussed earlier, on account of them being generic it is a double-barred subject: 'it is once barred as any subject is in the conditions barred and it has to be barred twice because it does not appear as a subject in the conditions'. Our generic subject is therefore even less "empowered" than the subjects of the truth procedures, it is

---

130 Ruda, *For Badiou*, p. 132.
131 Ibid.

'the subject minus the subject' taking the position of the minus sign, of the bar itself.[132]

> It rather would be *a subject supposed to remember*, *repeat*, *and work through* the thought of loving, militant, artistic, scientific subjects and the impossible actions they already performed. If philosophy needs to think the fidelity to fidelity and has to offer an affirmative interpretation of (even saturated) sequences, philosophy not to become a fully futile intellectual enterprise from time to time has itself to do the impossible. It has to *recall the impossible* as this is one way to render *why we simply should not want to understand ourselves as being nothing but animals*. In such a way, philosophy can intervene, it can be engaged philosophy.[133]

Such intervention 'necessary but impossible' is precisely what, I maintain, takes the name education.

All in all, a mere fine adjustment of Ruda's philosophical subject—in consistency with the separation between Truth and Subject (implied in the *philosophy|education* scission)—would suffice in order for it and my educational Subject recognise themselves as the double reflection of the same love-child. In short, the *Subject of subjects* of education I am proposing here appears isomorphic with Ruda's 'philosophical subject'.

Moreover, it likewise appears conditioned by an appropriately retuned notion of Clemens' 'condition of conditions of philosophy': namely, the letter.

Letter—>Language

I have repeatedly mentioned that the notion of language deployed throughout this thesis approaches asymptotically this idea of the *letter*. Hence, the concept itself—and its

---

132 Ibid. p. 185-6, n. 39.
133 Ibid. p. 132.

relation to language—now merits some some further attention.

By "letter" Lacan designates 'the material medium [*support*] that concrete discourse borrows from language. […] The primary reason for this is that language, with its structure, exists prior to each subject's entry into it at a certain moment in his mental development.'[134] The letter is, then, for Lacan the *material* substratum of language, 'the essentially localized structure of the signifier.'[135] As Dylan Evans explains, it is not 'a mere graphic representation of a sound', but 'the material basis of language itself'. The letter is something like a stray *datum* of the Real, which is wherefrom hails both its materiality and its indivisibility: '[it] is thus connected with the real, a material substrate that underpins the symbolic order. The concept of materiality implies, for Lacan, both the idea of indivisibility and the idea of locality'. Indivisible and 'meaningless in itself' the letter 'constantly insists in inscribing itself in the subject's life',[136] persisting in its senselessness like minimal, noisy *spermata*.

This persistance is the inevitable result of the letter being a leftover, a background radiation of the Real, its unsymbolisable excess, which becomes a phantasmatic form-*lessness* insisting to exist alongside that which has been effectively *in*-formed. The real, as Bruce Fink explains, 'is perhaps best understood as *that which has not yet been symbolized*, remains to be symbolized, or even resists symbolization; and it may perfectly well exist "alongside" and in spite of a speaker's considerable linguistic capabilities. […] *There is thus always a remainder which persists alongside the symbolic*[137]. Being the letter 'the material, non-signifying face of the signifier, the part that has effects without signifying' it is, crucially, 'the substance that gets off or enjoys'. Substance

134 Lacan, *Ecrits*, p. 413
135 Ibid. p 418
136 *Evans, Dictionary*, pp. 102-03.
137 Bruce Fink, *The Lacanian Subject: Between Language and Jouissance* (Princeton, NJ: Princeton University Press, 1995), pp. 25 & 27.

thereby 'gets the better of form and teaches it a trick or two.'[138] And herein resides, I would add, not only the link of the letter to the (noisy) object voice, but the paradoxical—and, as Fink himself crucially notes, *pedagogical*—interpenetration of *negentropic form* and *entropic substance*.

This rogue, 'substance jouissance' hails from the real, which is precisely the reason of 'the impossibility of mastering the letter.'[139] The letter is material, localisable, indivisible and, as Clemens points out, it is 'a lack with delimitable borders.'[140] The letter is, therefore, an *indivisible meaninglessness*, resembling the 'absolute inconsistency' of *différance*[141]—once again: it is a *diaphoric* bit. '*Différance*', Clemens continues, 'is this "event of matter" (Agamben) or "phantom of inconsistency" (Badiou) that un-founds systematicity.'[142]

I want to consider language, then, as the *minimal* movement of the letter out of mathematical ontology: its rookie foray into the (neg)entropic world of onto-logical appearing and relation, attempting to pluck the very first delicate shoots of sense, informing directly from the formless, relating, yes, yet still indiscernible in its murmuring noise. A language for subjects unfailingly aware that, when operating at the threshold of noise,

> [i]t is not a question of formulating correct judgments, but rather of producing the murmur of the indiscernible.
>
> In this production of a murmur of the indiscernible, what is decisive is the inscription, the writing, or, to borrow a category dear to Jean-Claude Milner, the letter. Only the letter does not discern, but instead effectuates.

---

138 Ibid. p. 119.
139 Clemens, 'The Letter as Condition of Conditions', p. 82.
140 Ibid.
141 Ibid. p. 84.
142 Ibid. p. 88.

I would add the following: There are several kinds of letter. There are, in effect, the small letters of the matheme, but there is also the "mystery in letters" of the poem; there is what a politics takes literally [*à la lettre*]; there are the letters of lovers.

The letter is addressed to all. Knowledge discerns things and orders divisions. The letter, which supports the murmur of the indiscernible, is addressed without division.

Every subject can be traversed by the letter, that is, every subject can be transliterated. This would then be my definition of an egalitarian freedom within thought: A thought is free once it is transliterated by the small letters of the matheme, by the mysterious letters of the poem, by the way in which politics takes things literally, and, finally, by the love letter.[143]

Condition of conditions

For Clemens, however, the letter seems to inhabit the liminal threshold between being and appearing, between the nomination of the event, and the subjective labour of forcing knowledge: 'it is *simultaneously* an integral moment in a truth process, marking its inaugural act of decision or intervention, *and* the matter of the knowledge of being. The disposition of letters involves a supernumerary *act* that at once founds the work of truth *and* the extension of being beyond its previous limits.'[144]

The letter as soon as it passes the threshold being|appearing becomes the first signifier of language: no longer void, but still empty of sense. A *noisy signifier*.

By positing the movement *letter—>signifier*, then, the attempt is simply to fine-tune Clemens' account—whereby the letter seems to be slightly over-worked at both sides of the border between truth and knowledge—and attend closely to the threshold

---

143 Badiou, HI p. 34.
144 Ibid, p. 92 (emphasis in original).

itself, thereby placing the letter on the side of being (and the void), and language on the side of appearing (and noise).

void	—>	noise
being	|	appearing
letter	—>	language (signifier)
nomination	|	epistemological work[145]

All of which is consistent with the *schizductive* methodology of translation I am utilising throughout this thesis. It is with this in mind that I can, *de jure*, posit with Clemens that 'the letter [language] as act of nomination is poetry; the letter [language] as act of knowledge is mathematics; the letter [language] as irreducible Two is love; the letter [language] in its universal address is politics' and that, therefore, 'all the conditions take letters [language] as their material and it is therefore legitimate to claim […] that letters are [language is] indeed the condition of conditions in Badiou's work.'[146] And as such, it conditions the subject of education.

Should we accept it, this generic subject of subjects coincides with the re-configured Freirean subject postulated in the introduction of this chapter. One which, through the operation of humanisation, opens out and generically links with a*ll four* subject procedures in Badiou's system.

---

145 The letter is certainly *not* an epistemological category: language, though, might be so. The all-important caveat here is that such epistemology should be nothing but the always unfinished result of the noisy epistemological labour of a subject of truth.

146 Ibid, pp 91-2. This theme underscores, of course, what Badiou refers to as 'the problem of the connection between the different procedures' (IT, p. 192). And whilst, yes, 'it is necessary to elaborate a general theory of the connections of the knots between different procedures' (ibid), I am under no illusion that merely positing a subject of subjects or a condition of conditions and a philosophy<=>education biconditionality will settle the matter. My modest wager is that by surveying the site with these tools, at the very least some useful findings might be brought to light.

But—and to keep this thesis consistent within a Badiouian speech-community—to speak of a subject is to speak of a truth, and, in turn, to speak of a truth is to speak of an event. To put it differently, if the consequences of an event are to be forced into the situation, subjective fidelity to the former must not waver. Which is to say: there needs to be an *ethics of truths* in place in order for the subjects to create an evental time.

2.4. Badiou with Freire: an Ethics of Humanisation as Truth

An ontological vocation

Thus, in this Badiouain/Freirean scheme I am attempting to lay out, philosophy does not produce truths, but announces their existence and prepares a conceptual space—namely, Truth—for their compossibility in thought: if philosophy is a *shelter for Truth*, education is *the workshop of truths*. Therefore, education—being on the side of philosophy—does not *produce* subjects either: rather, it prepares, in expectation of their arrival, a universally accessible temporal stretch (which emerges in the space opened up by the philosophical category of Truth), wherein it watches-out for their contingent appearance and, never loosing sight of a truth's demands (undecidability, indiscernibility, genericity and unameability) attends to the subjects' becoming-process in praxis. This temporal stretch, rendered by the philosophical space of Truth, is the generic Subject of education. For Freire, this Subject's discipline of truth, its operator of fidelity, is humanisation.

However—and this is will have become one of Freire's main contributions—the Pedagogy of the Oppressed (which is to say, 'problematising education'), as a thought-

praxis which materialises the subjective fidelity to humanisation, does carry a *sine qua non* ethical imperative: if humanisation is not to be betrayed, problematising education is not only a sufficient condition—it is a *necessary* one. And this is because if the evils of violent oppression are to be avoided, humanisation is not an option. For Freire, the subjective process implies a basal, foundational contradiction between humanisation or de-humanisation. In this respect, it might be worth recalling the opening lines of the English version of *Pedagogy of the Oppressed*:

> [w]hile the problem of humanization has always, from an axiological point of view, been humankind's central problem, it now takes on the character of an inescapable concern. Concern for humanization leads at once to the recognition of dehumanization, not only as an ontological possibility but as an historical reality. And as an individual perceives the extent of dehumanization, he or she may ask if humanization is a viable possibility. Within history, in concrete, objective contexts, both humanization and dehumanization are possibilities for a person as an uncompleted being conscious of their incompletion.[147]

As mentioned earlier, humanisation, or rather, its possibility—opened up by the singular breakthrough of thought-language—which, being not only species-specific, but species-*defining*, should be universally opened to all, is, and has been, constantly negated. It is 'thwarted by injustice, exploitation, oppression, and the violence of the oppressors'.[148] And yet, Freire—the unremitting dialectician—adds that humanisation 'is affirmed by this very negation'[149]. Humanisation, which names our species' 'historical and ontological vocation to Be More' [*sua vocação ontológica e histórica de Ser Mais*],[150] arrives presenting humankind with an inescapable and defining contradiction: a choice

---

147 POe p. 43. These lines are absent from the Portuguese edition.
148 POe p. 44. Se n 99 above.
149 Ibid.
150 PO p. 72.

between humanisation as affirmation and dehumanisation as its negative affirmation. That liminal moment when dehumanisation, in turn, triggers its own negation, will have marked the ontological ground of humanity's resistance—which is to say: the negation of dehumanisation will have inscribed the beginnings of politics (but also, and simultaneously: of the affirmation of the Two of love, together with the exploration of new forms in art and of their mathematical inscription in science).[151] This will have been, then, a new affirmation, 'by the yearning of the oppressed for freedom and justice, and by their struggle to recover their stolen humanity'.[152]

Oppressed, not victims

From this approach, there seems to appear yet another impassable obstacle to building a conceptual bridge between Badiou and Freire. And it is that the name 'oppressed' is prone to being stuck with victimising, or worse, identitarian connotations. Nothing would be further away from a Badiouian ethics than this, 'because the status of victim, of suffering beast, of emaciated, dying body, equates man with his animal substructure, it reduces him to the level of living organism pure and simple'.[153] In order to further illustrate this subject, Badiou relates accounts of survivors of torture, of people treated 'like animals destined for the slaughterhouse', and remind us that those who managed to maintain their humanity have done so through 'an almost incomprehensible resistance

---

151 'What singularises the political procedure is the fact that it proceeds from the infinite to the 1. It makes the 1 of equality arise as the universal truth of the collective by carrying out a prescriptive operation upon the infinity of the State; […] the amorous procedure, […] proceeds from the 1 to the infinite through the mediation of the two. In this sense – and I leave the reader to meditate upon this – politics is love's numerical inverse. In other words: love begins where politics ends.' (Badiou, M p.151); in this regard Clemens remarks that '[t]he nominal supplement of an event is integral to any and all of the truth processes, necessary to name the essential contingency of the existing situation and to open new possibilities for being.' 'Letter as Condition of Conditions', p. 91.

152 POe p. 44.

153 Badiou, E p. 11.

on the part of that which, in them, *does not coincide with the identity of victim*'.[154]

However, attaching victimary connotations to Freire's 'oppressed' would be a misconception of his use of the term. In truth, the Brazilian's disgust towards any sort of humanitarianism was, in fact, as strong as Badiou's:

> [t]he pedagogy of the oppressed, by seeking the restoration of intersubjectivity, presents itself as a pedagogy of Humanity. Only such pedagogy, animated by an authentically humanist—though not humanitarian [*humanitarista*]—generosity, can achieve that goal. Conversely, a pedagogy based in the egoistic interests of the oppressors—an egoism disguised as the false generosity of paternalism—and which makes of the oppressed the objects of its humanitarianism, maintains and embodies the oppression itself. It is an instrument of dehumanization.[155]

Freire signals a way out of victimising his conception of 'oppressed' through a triple movement. Firstly, he presents 'the oppressed' not as an identity, but as a consequence of the human being abandoning (or being forced to abandon) what is their ontological *and* historical vocation: that of *being more* than what Nature presents as the sole possibilities—what Freire calls 'limit situations' [*situações-limites*]. Human beings are separated from Nature by a unique urge to overcome such situations through the positing of new possibilities: what he refers to as 'unprecedented feasibility' [*inédito viável*].[156] As noted above, only humanisation is an 'ontological vocation': its obverse, dehumanisation—which is nonetheless a very real possibility—*is not*.

> Dehumanization, which defines not only those whose humanity has been robbed, but also—though in a different manner—those who have stolen it, is a distortion of the vocation of becoming *more*. It is a distortion made possible by history, but it is not a

---

154 Ibid (original italics).
155 PO p. 56
156 PO p. 53. Translated by Myra Bergman Ramos as 'untested feasibility' (POe p. 102).

historical vocation. […] The struggle for humanization, for freedom of labour, for de-alienation [*desalienação*], for the affirmation of men and women as persons, as "beings for-themselves" [*seres para si*] would have no meaning. This struggle is possible only because dehumanization, albeit a concrete fact of history, is neverthless *not a given destiny* but the result of an unjust "order" that engenders the violence of the oppressors which, in turn, the generates the *being less* of the oppressed.[157]

Dehumanisation, albeit having a historical appearance, has no being per se: it appears as a distortion, or corruption of humanisation. As such, when oppression happens (and it does of course happen) it does more so as a 'historical reality' than as an 'ontological viability'. Dehumanisation, which is the shared corruption of humanity of both oppressed and oppressors, is a distortion of true becoming and hence, 'oppressed'—inasmuch as it is a category empty of ontological substance—can never constitute an identity. Furthermore, dehumanisation—just like humanisation—is not a feature immanent to Nature, but a historical result of the dehumanising/humanising contradiction triggered by the *separation* from Nature and the contingent, arbitrary struggle for power that ensues. Dehumanisation does not produce an oppressed subject, but a 'false subject' [*o falso sujeito*].[158]

Secondly—and of the utmost importance if the term oppressed is to be cleansed of victimising connotations—is the fact that, granted, dehumanisation does not establish a new vocation—it does, nevertheless, constitute a seed of *resistance* to its violence:

[t]he oppressor's violence (which dehumanises them as much as those oppressed by them) does not inaugurate another vocation—that of "being less" [*a do ser menos*]. As a distortion of their vocation to "being more", "being less" will, sooner or later, drive the

---

157 PO p. 40
158 PO p. 48. One is tempted to further qualify the opposition: humanisation is on the side of *politics*, dehumanisation is on the side of *economics*.

oppressed into a struggle against those who have made them less.[159]

Finally, in a third move away from victimisation, Freire makes direct use of the foundational concept of humanisation: both oppressed and oppressors have been denied their 'ontological vocation' by the evils of dehumanisation: the inevitable struggle which ensues and which, let's not forget, is inaugurated by the oppressed,[160] becomes the only possible way back, for both oppressed and oppressors, to the redeeming way of humanisation:

> [t]his struggle only makes sense if the oppressed, while endeavouring to recover their humanity—which is a way of creating it—do not […] turn themselves, in fact, into "oppressors of the oppressors", but rather into restorers of the humanity of both.[161]

No room here, then, for identitarian victimisation: clearly for Freire the power to restore humanity resides on the weak and it is the 'humanistic and historical task of the oppressed' to liberate themselves together with the oppressors.[162] It is a stance that strongly resonates with a notion of politics which relates its truth to the Rancièrian 'part of no part', and the Badiouian 'void' of a situation: '[o]nly the power that is borne out of the weakness of the oppressed will be strong enough to liberate both'.[163]

True words, dangerous thinking

---

159 PO p. 41.

160 'Who, other than the oppressed, would be better prepared to understand the terrible significance [*o significado terrível*] of an oppressive society?' (PO 42-3).

161 PO p. 41.

162 PO p. 41.

163 Ibid. Badiou, for his part, writes in *Metapolitics* that '[a]s far as the notion of domination is concerned—or the counting of parts of a whole as substructure of the unequal—this I named not long ago, in my own jargon, 'the state of the situation' and Rancière names 'the police' (playing on the Greek word πόλις). That it is necessary—in order to think change—to think the correlation between the counting and non-counted, the State and insecurity (what I call the 'on the edge of the void'), between the all and nothing, is indeed my conviction. Everything hinges on the nominal summoning, through an event, of a sort of central void at the surface of a situation statified by a counting' (M p. 116).

For Freire, the problematising dialogue emerging within a Pedagogy of the Oppressed needs to keep its disciplined focus in the evental nature of humanising thought-language. *If it is genuine thought*, which is to say, *if the word is true*,[164] then, inasmuch as it is a thought-language that resists the dehumanising violence exercised by the state—and its excrescent knowledge, disseminated by 'banking education'—it is (it should be) an immanently subversive thinking. True thinking is, just like its Subject, incommensurable with the state: '[t]he thing is that genuine thinking is dangerous. The strange humanism of this "banking" conception is no more than an attempt to turn the human being into its opposite—the automaton, in itself the negation of the ontological vocation to Be More'.[165]

Freire posits a 'problematising education' that would stand against a 'banking' model which, by uncritically assisting domination, inhibits creativity and, by domesticating instead of forming, 'negates people their ontological and historical vocation to human-ise' [*nega os homens na sua vocação ontológica e histórica de humanizar-se*].[166] It is a conception of education as searching, as movement, as constant becoming—though Freire is very clear on this point: education's *moto perpetuo* needs to keep a firm ethical focus:

> this searching movement is only justified inasmuch as it is directed towards being more, towards peoples' humanisation. [Which is] their historical vocation, contradicted by dehumanisation which, not being a vocation, is a mere feasibility, verified by history. And, qua feasibility, it should appear to people as a challenge and not as an impediment to searching.[167]

---

164 A Freirean notion which, as we already saw, is not dissimilar, to Agamben's 'oath'.
165 PO p. 85.
166 PO p. 101.
167 PO p. 104.

Humanisation as Good, dehumanisation as Evil

The fact that dehumanisation is a 'distortion' of the human being's ontological vocation of 'being-more', is what lends Freire's subjective process its flavour of Badiouian ethics. In Freire, dehumanisation has no being in itself other than as a corruption, or a deviation, of the people's 'vocation to become subjects' [*a sua vocação de ser sujeito*].[168] The starting point in Freire is humanisation; dehumanisation—standing-in as a figure of Evil—is a distortion of humanisation—standing-in as the figure of Good. If we accept this, then the parallels with Badiou's ethics become almost explicit: 'If Evil is […], it must then be that it arises as the (*possible*) *effect of the Good it Itself*. That is to say: it is only because there are truths, and only to the extent that there are subjects of these truths that there is Evil […] if it exists, is an unruly effect of the power of truth'.[169]

In Badiou's ethical substructure, Evil has no being per se: it emerges as no more (no less) than a deviation from the subjective fidelity to a truth. And this subjective fidelity, or more precisely, the *disciplined operation* of this fidelity, is what stands in for the Good: '[t]he ethic of truths—as the principal of consistency of fidelity to a fidelity, or the maxim 'Keep going!'—is what tries to ward off the Evil that every singular truth makes possible'.[170]

For Badiou, then, an 'ethics of truths' equals a 'fidelity to a fidelity': he thus performs a separation which produces two succeeding fidelities, one included in the other. And, as it happens, it is precisely on the first term of this double fidelity that the model of education I am positing here operates. Indeed, from this Badiouian/Freirean perspective, education guards the (generic) fidelity of a (succeeding, subjective, localised) fidelity to a particular truth, *which is entirely emergent from a local educational situation* and

168 PO p. 227.
169 E p. 61 (original italics).
170 E p. 67; c.f. p. 53

which has humanisation as its unique operator. Thus a temporal space wherein 'an education by truths' becomes activated, is opened. Education hence becomes the exercising of a discipline of truths itself, the Jacototian *will*, or—what I contend is the same thing—the Freirean *praxis*.

Education's concern is to safeguard the fidelity to a fidelity—any fidelity as long as it is in the investigation of some truth. In other words, education is the caring of *generic fidelity*.

Education is a wager on a wager, not a matter of knowledge

As we saw in chapter 1, every situation implies some law prescribing that which belongs to it and discriminating that which doesn't—this is what Badiou refers to as the count-as-one. This oneness is what underscores 'Leibniz's thesis [that] "What is not *a* being is not a *being*"' the ontological rule 'which literally governs the immanence of a situation and its horizon of verity.'[171] For Badiou, this 'thesis of the law' is perfectly *veridical*, which does not mean it is necessarily *true*: truth is always a matter for the subject, who is unconcerned by the veridicality prescribed by the count-as-one (which is no more than the ontological formalisation of the Law). It is precisely in this sense that education, insofar as it supports the violation of the count-as-one, is *illegal*.

> Every truth is post-eventental. In particular, there is no "structural" or objective truth. Concerning structural statements admissible in the situation, we shall never say that they are true but only that they are veridical, they are related not to truth, but to knowledge.[172]

Insofar as its *exclusive* concern is the generic Subject to a truth, Education is

---

171 Badiou, BE p. 53.
172 Badiou, MP 107 (translation modified).

incommensurable with knowledge and, hence, with the state tout court. In Badiou's wonderful account, Archimedes' murder by a Roman soldier, is a perfect example of this incommensurability,

> [b]ecause it shows that between the right of the state and creative thought, [...] there is no common measure, no real discussion. In the end, power is violence, while the only constraints creative thought recognizes are its own immanent rules. When it comes to the law of his thought, Archimedes remains outside of the action of power. The temporality proper to the demonstration cannot integrate the urgent summons of military victors. That is why violence is eventually wrought, testifying that there is no common measure and no common chronology between the power of one side and the truths of the other. Truths as creation.[173]

Education thus operates on the eventual time created by a generic fidelity—it exercises the discipline of a 'fidelity to a fidelity' to a truth. In a properly Freirean education, the event to be connected to this generic fidelity is the passage from the human *animal* to the human *subject*—and such fidelity operates through the continual, dialectical, dialogical process of 'humanisation'. By the same token, education, being a matter of fidelity, becomes immanently militant,[174] insofar as

> [a] fidelity is not a matter of knowledge. It is not the work of an expert: it is the work of a militant. […] The operator of faithful connection designates *another mode of discernment*: one which, outside knowledge but within the effect of an interventional nomination, explores connections to the supernumerary name of the event.[175]

The Freirean Subject, guided (graced) by 'another mode of discernment',

---

173 Alain Badiou & Slavoj, Žižek, *Philosophy In The Present*, trans. by Peter Thomas & Alberto Toscano, ed. by Peter Engelmann, (Cambridge: Polity Press, 2009), p. 3.
174 'But 'militant' is a category without borders, a subjective determination without identity, or without concept' (M p. 142).
175 BE p. 329.

recognises if a particular, local educational situation (*any* educational situation whatsoever) *is* or *is not* connected to the primordial event of humanisation. They will, accordingly, 'perform the *minimal* gesture of fidelity' and either affirm it (as humanising) or denounce it (as de-humanising) in subjective militance to our species' 'ontological vocation': and this they do, unfailingly, every time they encounter an educational situation (whereby the conversion of Badiouan 'faithful enquiries' to Freirean educator-educand 'dialogical praxis').

In sum, education needs only to accept the following axiom: *a Subject, if human-ising, will have wagered on an event*. Once this "axiom of humanisation" is accepted as the exclusive operator, all that education has to do is keep reassuring the Subject that, despite the fact that every odd is stacked against their wager—and warding off the inevitable anxiety that the transgression of the Law keeps causing them—they need to 'keep going', that they need to never give up on their desire.[176]

Education itself is a wager on a wager, insofar as education wagers on the Subject's wager, siding with them, reaffirming their affirmation of the event. It keeps reassuring, even though it cannot, by any means, ever guarantee (humanisation does not, necessarily, make a subject).

2.5. Esplanade I: Epistemology, Gnosiology, Ontology

In order to discuss humanisation as an event, we must first clarify or untangle Freire's use of the concept of epistemology from gnosiology: the fact that Freire consistently uses the latter term (and therefore seemingly implying that his concern is focused on the

---

176 'I propose then that, from an analytic point of view, the only thing of which one can be guilty is of having given ground relative to one's desire.' Jacques Lacan, *The Seminar of Jacques Lacan: Book VII, The Ethics of Psychoanalysis 1959-1960*, ed. by Jacques-Alain Miller, trans. by Dennis Porter (New York: W. W. Norton & Company, 1997), p. 319.

problem of "knowledge" in its broadest sense, rather than that of "scientific knowledge") is a fact that seems to be missed by many commentators.[177]

An educational field conceptually presented as a gnosiological situation allows Freire to sow in such generic ground (cleansed of every particularity of discipline, method or any other state-determined prescription): firstly, a humanising ontology, whereby being is equated with being-cognisant and, secondly, an ethics of subjective becoming, whereby the world is placed as the mediating object to be cognised and problematised through a critical dialogue between educator and educand. It is through this dialogical process that the world (including, of course, the educational situation itself) is problematised, and the contradiction between those who 'know' and actively transfer knowledge, and those who 'ignore' and passively receive it, becomes dialecticised. *Conscientização* is hence activated through such problematisation of the world, which becomes the place to be transformed. Thus emerges the opposition between 'problematising education' and its pedagogical negation: the dominant, oppressive, anti-dialogical 'banking education'. If the latter equates education with 'an act of depositing, in which the students are the depositories and the teacher is the depositor',[178] the former is a logical (ethical) decision once the starting premises (viz. [1] being as knowing—en-route to becoming subject; [2] the world as mediating object of critical enquiry—always in the process of being transformed) are accepted.

In this sense, liberating, "problematising" education, can no longer be an act of depositing, narrating, transferring or transmitting "knowledge" and values to the

---

177 Both in his early and late work: see chapters I, part B and Chapter III, part B of his 1973 *Extensión o Comunicación?*—written in 1969—titled respectively 'Extension as gnosiological misinterpretation' (pp. 24-40) and 'Education as a gnosiological situation', (p. 85-109), and cf. his comment on *À sombra desta mangueira* of 1995 that '[w]ithout the curiosity that makes us beings in permanent availability for questioning […] there would be no gnoseological activity, a concrete expression of our possibility of knowing' (p. 94). Paulo Freire, *Extensión o Comunicación? La concientización en el medio rural* (México D.F.: Siglo XXI, 1984), published in English as part of *Education for Critical Consciousness* (London & New York: Continuum, 2005), referenced chapters on the English edition: pp. 90-101 and pp. 130-146.
178 PO p. 80.

educands—mere patients—as in the manner of "banking" education. On the contrary, it is a cognisant act [*um ato cognoscente*]. As a gnosiological situation, wherein the cognisable object, in lieu of being the terminus of the subject's cognisant act, is rather the mediator between cognisant subjects—educator on one side, educand on the other—problematising education requires, as a matter of course, the overcoming of the contradiction educator-educand.[179]

The contradiction between problematising and banking education can be seen as a praxial (ontic) mirror of the more fundamental (ontological) contradiction between humanisation and dehumanisation.

Freirean ontology = epistemology?

If some commentators seem to point to a certain misidentification on the part of Freire between ontology and epistemology[180], once we have accepted the thesis that Freire's ontology is rooted in the humanisation event, then the distinction itself is rendered meaningless. The danger is not so much a confusion between ontology and epistemology, but, as Morrow and Torres observe, that humanisation might render a subjective figure tainted with an essentialist telos. The point of departure of Freire's pedagogy is an ontology of praxis as a distinctive human quality.

> Freire's social ontology overtly operates within the framework of a humanist and existentialist Marxian framework based on the subject-object distinction. As a consequence, Freire's humanism potentially runs the risk of an essentialist conception of

---

179 PO p. 94.

180 Paul Taylor notes Freire's indistinction between 'epistemology and ontology, knowing and being', commenting that, for Freire, 'the Cartesian *cogito ergo sum* becomes "I know therefore I am", and he aligns himself with a classical Piagetian psychology which views cognitive development as a personal development.' Paul Taylor, *The Texts of Paulo Freire*, (Buckingham & Philadelphia: Open University Press, 1993), pp. 56-7

the subject (he does refer to "man") and a theory of praxis that suffers from the limitations of an individualistic philosophy of consciousness and the model of praxis as "work.".[181]

Freire finds a way out of this essentialism, according to Morrow and Torres, through the figure of dialogue; indeed, dialogical praxis takes this ontology to a 'communicative direction that avoids most of the problems associated with essentialist forms of humanism (and related gender bias)' neither deterministic nor teleological human essentialism 'to be realised.'[182]

However, as Serres reminds us, there is no dialogue devoid of noise: the former 'is a sort of game played by two interlocutors considered as united against the phenomena of interference and confusion, or against individuals with some stake in interrupting communication.'

> These interlocutors are in no way opposed, as in the traditional conception of the dialectic game; on the contrary, they are on the same side, tied together by a mutual interest: they battle together against noise. The cacographer and the epigraphist, the cacophonous speaker and the auditor, exchange their reciprocal roles in dialogue, where the source becomes reception, and the reception source (according to a given rhythm). They exchange roles sufficiently often for us to view them as struggling together against a common enemy. *To hold a dialogue is to suppose a third man and to seek to exclude him*. A successful communication is the exclusion of the third man. The most profound dialectical problem is not the problem of the Other, who is only a variety—or a variation—of the Same, it is the problem of the third man. We might call this third man the *demon*, the prosopopeia of noise.[183]

---

181 Raymond A. Morrow & Carlos Alberto Torres, *Reading Freire and Habermas: Critical Pedagogy and Transformative Social Change* (New York & London: Teachers College Press, 2002), p.34.
182 Ibid.
183 *Hermes*, p. 67

As Harari and Bell explain, what Serres is proposing then, is that '[c]orrect transmission seems to require two contradictory conditions. On the one hand, it necessitates the presence of noise, since the meaning of a message takes shape *only* against a background noise. On the other hand, it requires the total exclusion of precisely what it needs to include, namely, background noise.'[184]

And it is this noise that we are ready to cross through now.

---

184 'Introduction', *Hermes*, pp. xxv-xxvi

3. Bridge: Apparitions, Translations, Transductions, Schizductions

3.0. Crossing Over[1]

How to traverse *noise*? Let us remind ourselves of the main principles do Serres' hermetic methodology:

> Visit the environment. Traverse circumstances floating like crowns around the instance or substance, around the axis of the act. Make use of what is cast aside. Describe the parasites in signals, the collective or the living: it is always to be found eating right next to you. Study neighbourhoods, travel along country roads which surround and give shape to the countryside. Consider the fluctuations, deviations or inclinations, in the estimations or concepts of science. Atoms are sometimes cast aside. Do not despise conjunctions or passages. Hermes often veers off as he goes along. And detaches himself. Observe the mingled flows and the places of exchange and you will understand time better. Hermes gradually finds his language and his messages, sounds and music, landscapes and paths, knowledge and wisdom. He leaps sideways, to the places where the senses murmur and tremble, the neighbouring turbulence of bodies—sensation. He loves and knows the spot where place deviates from place and leads to the universe, where the latter deviates from the law to invaginate into singularity: circumstance.[2]

This environment we are about to visit, this 'circumstance' that needs to be traversed is, precisely, noise. Serres' methodology instructs we do so by way of

---

1 'During meiosis, an event known as chromosomal crossing over sometimes occurs as a part of recombination. In this process, a region of on chromosome is exchanged for a region of another chromosome, thereby producing unique chromosomal combinations that further divide into haploid daughter cells.' 'Crossing Over', *Encyclopædia Britannica* <https://www.britannica.com/science/crossing-over>[accss. 13 Sept. 2019].

2 Serres, *The Five Senses*, p. 287.

conjunctions, deviations and sideways leaps into haphazard neighbourhoods. We are there to attend to any local parasites[3] busy at their hermetic work: their folding of the outside into the inside, producing what initially appear as unlawful invaginations, but which eventually will have become the singularity of language, message and form.

Noise as environment, noise as subject

The opening statement of this thesis anticipated the exposition of three thematic threads: two main themes—Badiou (as a philosophical framework) and Freire (as a pedagogical argument)—and *noise* as the resultant bridge, or gap, developing between them (i.e. noise as *environment,* as alluded to above).

How (where, when), then, does noise relate and separate those main themes as expounded so far? How (where, when) does it resonate within Badiou, Freire and the motif of education? Moreover, considering that—in fidelity to the methodology I chose to follow—noise was postulated as the *passe-partout* environment of the whole journey: what happens to noise when it itself passes into *subject*? What emerges, thereon, as *environment*?

In order to answer the above questions, it might be useful at this point to rewind, playback and attend to any eigenresonances that *noise* might have been triggering in its passage through the main themes (viz., Badiou, Freire, noise itself).

(1) Badiou: the philosophical framework

There was here an implied a decision on the notions of *being*, *truth*, *event*, *subject*, *the void*;

---

3 Apart from its bio-sociological meaning (as in English), the word *parasite* in French also refers to the static noise in a signal.

such a decision determined what 'an education *by* truths' really means (requiring an understanding of the notions of *subject* and *event*). As for *being* and the *void*, we established that every ontological situation is structured around its void, its constitutive lack, or un-occupiable point.

It was within that framework that I introduced the operation of an inaugural translation: *the void* will be translated as *noise* (written, *the void* —> *noise*, or more formally, $\varnothing \longrightarrow \eta$). Following that—and still in consistency with the Serresean methodology—I extracted from the translation something like a noisy corollary (what I refer to as the translation's *work*): noise thenceforward becomes a *temporalised* void (η_t).

(i) inaugural translation: $(\varnothing \longrightarrow \eta)$

(ii) corollary (translation's work): $(\varnothing \longrightarrow [\textit{temporality}] \longrightarrow \eta_t)$

All of which indexes the passage from being (ontology) to appearing (phenomenology).

(2) Freire: the pedagogical argument

The notion of education up to this point remained purely subsumed to the above (Badiouian) notions. I thus proceeded to supplement it within the Freirean argument. I applied here a key assumption of this thesis—namely, that philosophy and education are biconditionally related (what I have been formulating as: philosophy<=>education). This material equivalence laid the ground for a conceptual scission which begot a place of *Truth* and a time of the *Subject*: education, conjectured as the carer of such temporality then relates to noise in a double braid: firstly (and evidently) time is unthinkable without entropy, irreversibility, *noise*; secondly, Freirean education *subjectivises time* through the praxis of *dialogue*—which is itself unthinkable without (a) the

background of noise immanent in any exchange of information (noise-outside) and (b) the libidinal anxiety produced by the onset of the dialogical relation (noise-inside).

Education, then, resonates with noise in three related registers:

(iii) as the time of the (unfinished) subject, (time is entropy, irreversibility, *noise*)

(iv) as fidelity to (the incompleteness of) language (noise as both *excess* and *lack*)

(v) as duration subjectivised through dialogue (noise as *anxiety*, or, noise-inside)

All of which is integrable, utilising Badiou's philosophical tools, in an *ensuing translation*:

(vi) education *by* truths—>education *in* noise

(3) noise

And finally, noise as the remainder of a *methodology of translation* wherein it is itself one of the terms of said translation: (a) noise is a translation of the void and (b) every translation produces noise—ergo, (c) the translation of the void into noise produces its own noise:

(a) the void $(\varnothing)$ $\xrightarrow{\quad(translation)\quad}$ noise (η)

(b) every *translation* produces a *remainder noise* (η_r)

(c) the void $\varnothing$ —[*translation*—>(remainder noise: η_r)]—>noise η

We are therefore left with seven formulas wherein noise relates with the three main themes, as either translation, temporalisation, remainder or excess:

- *philosophy*:

(i) $\varnothing \xrightarrow{\quad translation \quad} \eta$

(ii) $\varnothing \xrightarrow{\quad temporality \quad} \eta_t$

- *education*:

(iii) time of the *subject* $\rightarrow \eta_s$

(iv) excess of *language* $\rightarrow \eta_l$

(v) dialogue, *anxiety* $\rightarrow \eta_i$

(vi) education *by* truths $\xrightarrow{\quad translation \quad}$ education *in* noise

- *noise*:

(vii) $\varnothing \xrightarrow{\quad translation \quad} \eta \nearrow \eta_r$

In formula (vii) we have a graphic example of the recursive, self-dithering properties of the signifier noise. These properties (recursion, iteration, reflexivity, paradox) point to that onto-phenomenological hinge between the void (on the ontological side) and language-thought (on the physico-phenomenological side): what I am positing is that it is in this hinge between the ontological and the phenomenological—between the abstract and the empirical— wherein noise itself originates.

Noise is a noise-producing methodology: it thus becomes simultaneously both subject *and* environment. It is in such paradoxical kilter that noise separates and relates the subjects of this enquiry.

Noise as shown impossibility

It is this recursive, self-dithering property that allows noise to infiltrate every possible communication, dialogue and relation. And this pan-infiltration of noise is no more than the *phenomenal* expression of the *ontological* fact that every situation is structured around its own void.

All of which points to the limits to language referred to earlier. Such a breaking-point in the signifying chain of language, the apparition of which is none other than metaphor, ultimately reflects on the impossibility of signifying the Real. This impossibility, being an immanent limit lying within the blind spot of subjective dialogue, *can only be shown.* And, insofar as this "shown impossibility" is the phenomenal appearance of the void, it coincides, precisely, with the conception of noise that I am intending. The crucial aspect here is that, once accepted, this is a conception which perhaps, as Slavoj Žižek points out, 'opens up a new approach to phenomenology, redefined as the description of the ways in which the breakdown (failure) of symbolization, which cannot be signified, *shows itself.*'[4]

This idea of noise as *a showing of the impossibility to signify the Real*, which, as Žižek notes, is intrinsically phenomenological (and *performative*), then draws a possible bridge between Freire's phenomenologically heavy enterprise, very much reliant in consciousness, and Badiou's subtractive ethics that 'relates to the particularity of a situation only from the bias of its void.'[5]

Furthermore, this conception of noise permits the passage of concepts from mathematical ontology, via the Lacanian Real and the remainder of language, all the

---

4 Žižek, *The Plague of Fantasies*, p. 279.
5 Badiou, E p. 73

way to Malaspina's epistemological uncertainty and Shannon's information theory. We find here noise at its most Serresian—I will hence denominate it *hermetic noise*: a noise allowing for a filtering through, a passage (or translation, or transduction, or, better still, *schizduction*) from ontology, through phenomenology to epistemology, all the while keeping a fidelity to the exception of the event of which noise is itself both the reminder and remainder.

3.1. The Void (Becomes) Noise: ∅ —> η

I return now to Fraser's passage quoted earlier, regarding the fact that, firstly, the subjective process is a 'temporal unfolding of a truth'[6] and, secondly, that time has no place in Badiou's ontology. As it happens Fraser's analyses on Badiou's void and its relation to subjectivity are of particular pertinence to my whole argument. Indeed, the soundness or otherwise of the translation *void–>noise* depends on accepting a temporalisation of the immanently atemporal and isentropic void of set theory. Fraser's insights seem to justify such a move in that they support the following reasoning: (i) the void is atemporal, isentropic (ii) noise is temporal, entropic (iii) the subject-process is a 'temporal unfolding of a truth'—therefore (iv) the transduction from the void to noise (should we accept it) implies a temporalisation of the void.

ontological being		phenomenal appearing
atemporal		temporal
isentropic		(neg)entropic
Truth		subject process (truths)
the void	—>	*noise*

6 Fraser, 'The Law of the Subject', p. 94.

This is underlining one of the key operational assumptions at work in my thesis: that the passage from ontology, viz., the presentation of *being*, into the world of *appearing*—which is something like a Badiouian *phenomenology* (let's agree, for now, on that word)—requires that ontology be supplemented with some notion of temporality. Once again, such is the sole rationale behind the fundamental translation at the core of my argument, viz., *the void—>noise*. Differently put, insofar as the subject develops in time, it 'cannot be understood in strictly ontological terms': therefore, we need to move out of the atemporality of mathematics in order to properly conceptualise the trajectory of a truth (hence the translation *void—>noise*, hence the separation of the *temporality of the Subject* from a *locality of Truth* and hence, finally, the conceptual scission between philosophy and education).

If a subject is to remain faithful to an event, the truth-procedure must not lose its bias on the void at any stage throughout the trajectory. Should we agree on that, then the void must somehow subsist, in some form or other, outside of ontology and still remain operative within the phenomenological world of appearing and relations: my claim is that if this is the case, then *its manifestation must surely be something in the order of noise*.

There will be a four-way consequence of this translation: *(i) noise becomes evental* and *(ii) the event becomes noisy; (iii) noise becomes subjective* and *(iv) the subject becomes noisy*

(i) making noise evental:
Considering that for Badiou (a) the event is an unpredicted, chance appearance of the void, and that, as posited here (b) noise is the phenomenal rendering of the void, these two statements taken together would imply that *an event can be also thought as an occurrence of*

noise within a situation. By making noise evental in this sense, it becomes a subtractive, punctual, singular *spike*, exceptional and rare, rather than ever-present. Noise in this sense, is the fleeting (phenomenal) appearance of the (ontological) void. What this translation brings is a subtractive idea of noise as a vertical, subjective cut rather than as the horizontal exuberance of chaos and nature, with which is more commonly associated in most philosophical discourses.

(ii) making the event noisy:

An event is irreversible—or more precisely: *an event is a rare manifestation of pure irreversibility*. It is this characteristic which potentially will have related Badiou's notion of event with a thermodynamic conception of noise. This perspective brings with it a whole new point of view from which to re-think Badiou's (patently undeveloped) notions of chance and randomness, both loosely associated with the occurrence of the event *and* with the subjective trajectory induced therein. A thermodynamic perspective including notions such as (neg)entropy, irreversibility, the arrow of time, provides the thinking of the trajectory of a truth and of its subtractive modalities with a whole new meaning.

(iii) making noise subjective:

But most importantly, for noise to become properly evental, it needs to be pointed at, engaged with. The harnessing of the truth-producing potential in noise, requires the intervention of a subject. It is in this precise sense that I maintain that noise is, indeed, *subjective.*

(iv) making the subject noisy:

Granted, in its empirical manifestation, noise is everywhere: from cosmic background radiation to quantum decoherence; however, the noise that I am attempting to

conceptually separate from nature's undifferentiated plane, will always already require the reverberant space of *some* subject. And, once again, the tending of this space—which means nursing the subject's uncertainty and anxiety brought about by their constant exposure to noise—is the task of education.

All of which allows for the following assertions:

- temporality appears as soon as the subjects initiate their truth-building itinerary

- the process of truth is also inseparable from a notion of praxis, *work*.

- time and work are both thermodynamic notions inextricably linked to (neg)entropy.

- where there is (neg)entropy, there is noise.

From which emerges *the work of the subject* and their *production of time*: this is the educational time of the Subject, emanating from the philosophical place of Truth. Which is why an 'education *by* truths' can be translated as *an education* in *noise.*

Noise then, insofar as it operates as a translation of the void—which is that which fleetingly manifests itself as an event—thereby becomes a notion inseparable from subjectivity and immanently related to the concept of truth.

Furthermore, the void becomes the ever-present, background noise constantly infiltrating and both permeating the subjective inside (in the form of anxiety) and the phenomenal outside (in the form of epistemo-logical noise).

This background noise however, may be diversely indexed according to the different stages of the time-producing (neg)entropic truth process: (i) there is firstly the hazardous, entropic upsurge of the immanent void of a situation: the event per se, which (ii) phenomenologically appearing as noise η_φ, triggers the subject into its (neg)entropic,

time-producing work which itself (iii) is an emitter of *logical* noise η_λ as it randomly investigates the consequences of the event, the truth of which eventually (iv) is forced into the situation as new knowledge, whereby (v) a new situation is configured, spiralling out the narrative of History:
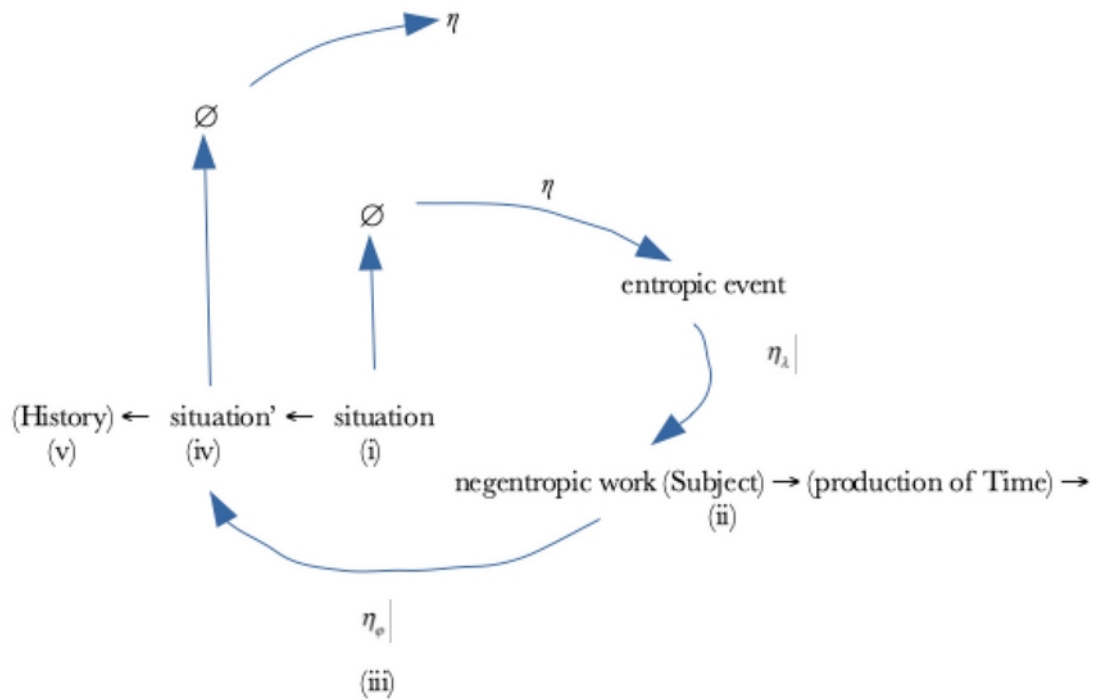
On this note a crucial clarification might be fitting: the intention of this thesis is not to elaborate an *apologia* of noise—in other words, *noise itself is not the event*: noise is perfectly neutral, indifferent. And so is anxiety, which as an affect has no ethical value in itself (neither language, nor, for that matter, *the human*). Just as the void is ontologically included in every situation, noise is an ever-present, phantasmatic background hum: there still needs to be an event, and there still needs to be a subject transformed by such event.

In other words, (1) something anomalous needs to happen disturbing the bell-

curve of the normal statistical distribution of randomness, a 'voltage spike', a non-normal vibration breaking the mean[7] (2) there needs to be a subjective intervention pointing out such an anomalous spike and declaring that its occurrence, its causes and its consequences are worth pursuing.

Between ontos and phenomena

One might therefore think of noise as a thermodynamic, (neg)entropic, void; a *temporalised* void able carry us right across the border from the meta-mechanical, isentropic regime of ontology, all the way to the mechanical and thermodynamical regime determined by temporal phenomena.

The void, of course, still needs to remain empty: hence, it cannot *contain* time—time cannot belong to the void, insofar as only nothing belongs to it. However, the void/noise, being universally inclusive, is necessarily *a part* of time (*if*, that is, we can accept that time is itself a situation; strictly speaking, time belongs on the side of the event and the subject and, as we have already established, Badiou's ontology does not seem to be able to think temporality, insofar as time is always an emergent result of the subject's enquiries, a post-eventual, praxial production of a present. Time, from this perspective then, is a nonontological situation—which is precisely why every temporal situation cannot be founded on the void, but on *noise*).[8]

However, even if the translation, $(\varnothing \mathord{-}\mathord{>} \eta)$ is accepted, and insofar as we are in the realm of appearing, we will still be required to look at the inscriptions of the void in the world, and perform our translation(s) therein. If the void is universally included, that

---

7 Malaspina, EN, p. 99.
8 C.f. Hallward: 'It is clearly impossible for any material or nonontological situation to be founded upon the literal (or mathematical) void Ø as such' (*Badiou*, p. 119).

means that it will hazardously emerge (as a result of the lacking metastructuring of the recounting of every state) in every situation—or, if speaking of a regime of appearing, in every *world*.

As we have seen, according to Badiou events will happen in the situation-worlds of art, science, politics and love. Let us refine the above statement: the void will have appeared in *every* situation-world: it so happens that *only when the void of the world-situations defined by art, science, politics and love emerges*, it becomes an emergence with the capacity to acquire the intensity of an event, and hence ignite the work of some subjects and the consequent production of a truth.

If the void is universally included, and 'thus distributed everywhere',[9] the translation *void–> noise* would imply that the latter, too, is universal—which is something that makes empirical sense (one only needs to invoke the cosmic background radiation, or the universal affect of anxiety, for example).[10] This is clearly the position taken by Greg Hainge:

> [d]o ideas and concepts not also [just as matter does] move and vibrate, resonate with and impact upon each other, vibrate in and beyond the time into which they are released? Everything, then, is expressive, not only embodying a form but for ever forming an embodiment. Or, rather, for this will be our contention, everything is in noise, and noise is in everything.[11]

The temptation here would be, however, to follow through with Hainge's

---

9 BE p. 57.

10 On the other hand, it is worth noting that *noise cannot contain everything* (which would make it appear as a Whole, and the latter, as Badiou repeatedly asserts, 'has no being' (LW p 110). This matter, however, can only be resolved axiomatically: '[i]n the end, the question of the Whole, which is logical or onto-logical in essence, enjoys no physical or phenomenological evidence. It calls for an argument, the very one that mathematicians discovered at the beginning of the twentieth century, and which we have reformulated here' (LW 111); Badiou is here referring to the paradoxical impasse of self-belonging: if a Whole exists, then—being whole— it must contain itself, thereupon bringing about its own inconsistency (illustrated by Russell's paradox). Such inconsistency is what the ZF axiomatisation of set theory intended to address.

11 Hainge, *Noise Matters*, p. 2.

absolute ontologisation of noise: if Badiou's gambit is *mathematics = ontology*, Hainge's is *noise = ontology* (in other words: *noise = being*, tout court). For this to happen, the transitive *noise = mathematics* should hold (something not entirely impossible to argue, if one is ready to switch formal groundings and pass from set theory to information theory).

Now, if Badiou's void is 'the proper name of being'—and should our translation *void—>noise* stand—this would imply that we can equally assert something like 'noise is the proper name of being': this would surprisingly prove, *in Badiouian terms,* Hainge's thesis—which is clearly stated in (incompatible) *Deleuzian* terms.[12]

This conclusion however, is evidently incorrect: the translation *void—>noise* has already moved us out of ontology, or at the very least, it has relocated us to the threshold between being and appearing. Hainge's formula is not ontological, but phenomenological—something which makes complete sense if we take into account that the Spinozist/Deleuzian DNA of Hainge's noise-studies will always already have collapsed the realm of appearing with that of being, producing a flat ontology indistinguishable from a phenomenology. This should not be read as a mere Badiouian incrimination: far from it, it is a fact which is explicitly acknowledged by Hainge himself: '[i]n effect, what I want to suggest here, then, is that there need not be a split between the operation of noise as a philosophical concept and its manifestations in expression, that it is not necessary to separate out the ontological from the phenomenological.'[13]

However, a more fundamental difference between this Spinozist/Deleuzian conception of noise (a conception which, as we shall see, is much closer to a certain discourse on *chaos* than to noise proper), and the subtractive, Freirean/Badiouian one

---

12 'Noise straddles both the actual and the virtual, the realms of concept and matter, multiplicity and singularity; it is the by-product of the event taking place in the becoming situated across these poles, the very precondition of expressivity that is born only as an unintended yet inexorable consequence of expression itself' (ibid, p. 23).
13 Ibid. p. 22

which I am attempting here, will have to do with the operation of a *subject* (something completely absent in Hainge and, for that matter, in almost all Deleuzian approaches to noise).

It is not only that noise is *subjective*: moreover, when thought of as something like *the void inside*, noise is that which *begets subjectivity*. What is meant by this is the following: the human singularity (what some would call 'self-consciousness'), from a Badiouian perspective, is nothing else but the capacity (one could add, *the burden*) to internalise the void; such internalisation is what translates as noise-inside. Hence, it is a capacity to incorporate a trajectory that crosses over from being (wherein the ontological void is wrapped by language/thought) to appearing (wherein the void emerges phenomenologically as noise, anxiety). And it is only within the hazard of this noisy itinerary that a subject—which is to say, *a truth*—might emerge. On this issue, Badiou is unequivocal:

> [i]n particular, man is the animal that appears in a very great number of worlds. Empirically, we could even say it is nothing but this: the being which, among all those whose being we acknowledge, appears most multiply. The human animal is the being of the thousand logics. Since it is capable of entering into the composition of a subject of truth, the human animal can even contribute to the appearance of a (generic) being for such and such a world. That is, it is capable of including itself in the move from appearance (the plurality of worlds, logical construction) back towards being (the pure multiple, universality), and it can do this with regard to a virtually unlimited number of worlds.
>
> This notwithstanding, the human animal cannot hope for a worldly proliferation as exhaustive as that of its principal competitor: the void. Since the void is the only immediate being, it follows that it figures in any world whatsoever. In its

absence, no operation can have a starting point in being, that is to say, no operation can operate. Without the void there is no world, if by 'world' we understand the closed place of an operation. Conversely, where something operates [*où ça opère*]—that is, where there is world—the void can be attested.[14]

This striking passage resounds with some crucial notions at the core of my argument: we have here the human animal as a being traversed by the infinite, noisy recursion of a 'thousand logics', entangled in a self-reflective, paradoxical 'move from appearance [and] back towards being'. Most crucially, when Badiou writes that '[u]ltimately, man is the animal that desires the worldly ubiquity of the void'[15], he is pointing at exactly the same the knot that I am engaging here: *language/thought/desire* as the emergent result of *the void/noise*. It is such emergence, doubly indexing 'a logical power [and] the *voided* animal',[16] which sets an evental site for the potential appearance of the subject.

The double register of noise

Harking back to the question posed at the opening of this bridge-chapter: how is one to attend to noise when it passes from background to subject? How can such a protean figure acquire an identity at all? It is here that bringing noise back into the regime of ontology might be useful.

And here, the thing to remember is that within set theory the void operates as a *marker of identity*. And it does so only through the operation of the axiom of extensionality, which establishes that '[t]wo sets are equal if and only if they have the

---

14 LW p. 114.
15 Ibid.
16 Ibid.

same members'.[17] What this crucially implies is that *there is nothing* guaranteeing the identity of any multiplicity whatsoever—as Fraser explains,

> '[w]hat [the axiom of extensionality] says, after all, is that the 'act' of assembling elements into a set has, in itself, no qualities whatsoever, that it contributes nothing to the identity of the set so formed. Once we know all of the elements of a set, we know all there is to know about the set in question. There is no 'substance', no ontic 'thickness', to the operation of the count itself.[18]

In short, as Badiou himself puts it, 'the nothing is the operation of the count.'[19] Key for Fraser however, is that the axiom of extensionality 'strips unity of substance while grounding identity in the void', and, most important of all, that the pivot is in the word *between*—the hermetic word par excellence: '*between* presentation as structure and presentation as structured-presentation, *between* the one as result and the one as operation, *between* presented consistency and inconsistency.'[20]

For Fraser, Badiou's void implies a double register '[n]aming both the inconsistent being of the in-itself, and the contradictory eruptions of the for-itself'; it is, thus, through the void that 'Being and Event communicate.'[21]

The void is devoid of any relationality, as Hallward correctly asserts—except that, Fraser argues, it is through the void that something like an inaugural communication appears. But the void carries *nothing*: it cannot carry information—and yet, Fraser is also correct: there must be some channel, some relation wherefrom the eventful for-itself and the ontological in-itself will have exchanged (or transduced, or *schizduced*) some

17 see Paul J. Cohen & Reuben Hersh, 'Non-Cantorian Set Theory', *Scientific American* 217:6 (Dec. 1967), pp. 104-117 (p. 114); 'in other words', Peter Hallward explains, 'a set's identity is determined entirely by its elements' (*Badiou*, p. 338).
18 Olivia Lucca Fraser, 'Void', *Badiou Dictionary*, pp. 377-80 (p. 378).
19 BE p. 55.
20 Ibid. p. 379 (my emphasis).
21 Ibid. p. 380.

information (here, one cannot contradict science: information has, quite literally, nowhere to hide).[22] In order to traverse this impasse, Fraser's thesis might need to be gently tweaked: Being and Event (inside and outside, physics and mathematics, cosmos and history) do indeed communicate: just not through the void, but through noise.

Between the abstract and the empirical

And so, as speculated earlier, it is indeed here, at the boundaries between being and appearing, where we can attend to the first tinkling of noise, as the void oscillates between domains of different materiality. It is a noise that coincides, as Douglas Kahn puts it, with 'that constant grating sound generated by the movement between the abstract and empirical.'[23] The reference here is, once again, Serres:

> '[m]athematical form is both a Universal in itself and a Universal for us: and therefore *the first effort to make communication in a dialogue successful is isomorphic to the effort to render a form independent of its empirical realizations*. […] At the extreme limits of empiricism, meaning is totally plunged into noise, the space of communication is granular, dialogue is condemned to cacophony: the transmission of communication is chronic transformation. Thus, the empirical is strictly essential and accidental *noise*.[24]

The void is ontologically secured—decided, axiomatised. Perfectly contained within mathematics and mathematics alone, it allows us there to think inconsistency *consistently.* Noise, for its part, speculated as something like the movement of this isentropic, static

---

22 The fact that information cannot be lost has been established by what is known as the *no-hiding theorem*; see Samuel L. Braunstein, & Arun K. Pati, 'Quantum Information Cannot Be Completely Hidden in Correlations: Implications for the Black-Hole Information Paradox', *Physical Review Letters* 98:8 (2007) DOI: 10.1103/PhysRevLett.98.080502.
23 Douglas Khan, *Noise, Water Meat* (Cambridge, MA: MIT Press, 1999), p. 25.
24 Michel Serres, *Hermes: Literature, Science, Philosophy*, ed. by Josue V. Harari & David F. Bell (Baltimore & London: The Johns Hopkins University Press, 1982), pp. 69-70.

void out of the pure ontological situation into the entropic, phenomenal world, might, on the other hand, allow us to make sense of both *senselessness* and *nonsense* in a subtractive manner.

However, for that subtractive sense to emerge, our noise will have to be separated from the variously coloured noises of empirical science, as much as from the virtual white noise of vulgar Deleuzianism. It must remain in a doubly subtractive register: the mathematisable noise of information entropy *together with* its (non-cognitive, non-psychologisable) subjective counterpart inside the subject: anxiety.

And, to repeat once again: it is this double register of a subject-constructing noise—information, language on one side, anxiety, subjectivisation on the other—that requires the abutment of an education by truths.

Part II

4. Noise Outside

5. Noise Inside

Part II

4. Noise Outside

It is as black as Malevich's Square

The cold furnace in which we stare

A high pitch on a future scale

It is a starless winternight's tale

It suits you well[1]

4.0. Intro: Which Noise?

As noted in the Introduction, there are abundant definitions and manifold uses of the word "noise", each dependant on the particular field, or community of practice, wherein it appears—information theory, statistical thermodynamics, quantum mechanics, signal processing, probability theory, statistics, bio-genetics, cognitive psychology, economics, acoustics, psychoacoustics, music theory, and so on—each defining what Sean Carroll refers to as a 'domain of applicability'.[2] This is not necessarily a bad thing: in fact, as Malaspina notes, this lack of 'a shared formal definition of noise' could be taken as an opportunity, insofar as it 'opens a space for metaphorical reverberation within scientific discourse, and even more so in the straits between the natural and the human sciences, technology and the arts.'[3] Furthermore, Malaspina points to something rather symptomatic in the protean spiral of signification that noise produces:

1 Einstürzende Neubauten, 'Sabrina', *Silence is Sexy* (Potomak, 957052, 2011)

2 Sean Carroll, *The Big Picture: On the Origins of Life, Meaning and the Universe Itself* (London: Oneworld, 2017), p. 96. The notion is almost identical to Léon Rosenfeld's 'domain of validity'; the term was subsequently borrowed by Ilya Prigogine; see Ilya Prigogine (in collaboration with Isabelle Stengers), *The End of Certainty: Time, Chaos and the New Laws of Nature* (New York: The Free Press, 1997), p. 29.

3 EN p. 7.

> [h]ow can we understand this transfer of the idea of noise from mechanics to information, and from its antithetical relation with work in classical mechanics to self-regulating systems with noise, bearing in mind also that the general notion of noise is derived from an aesthetic and moral connotation of acoustic events?[4]

In other words, how can we identify *a particular noise* without muting its protean nature? Or, to put it in terms relevant to my argument: with which (if any) of all of these noises will *the Noise of the Oppressed* resonate?

As stated in the introduction, it is a question of neither extracting from the total sum of these definitions something like an appropriate "template" from where to fine-tune a suitable usage, nor to "synthesise" a pragmatic, applicable notion of noise. Such approaches would undoubtedly dampen its hermetic potential as a *pan-boundary trespasser*, as the interrupter, infiltrator of borders. A Hermetic noise able to carry us through borders that are not only epistemological (as Malaspina has it), but also ontological, phenomenological, physical, biological, psychological…

An unavoidable exercise, then, will be to call up the whole spectrum of the accepted, standard definitions of noise, and then to identify which conceptual bands of it will have resonated with those filters within my argument which I've been referring to as its *eigenconcepts* (the void, event, truth, subject, language, humanisation...).

Semasiologies

To reiterate: noise is a noisy word. This is not meant in the sense that "noise" is a self-referential, or autonymic word (it is neither). What is meant is that the signifier "noise" seems to add noise to its own field of significations. It *self-dithers*, so to speak, and by so

---

4 EN p. 94.

doing it refracts a multiplicity of literal denotations and an uncountable virtuality of figurative ones. Its meaning seems to flicker, unorderly, to and fro along its axis of metonymic displacements, as it oscillates up and down, randomly substituting its metaphoric condensations.

The signifier "noise" produces—appropriately so—a noisy field of significations. Its meaning, which might *also* be chaotic (noise and chaos are not the same thing, as we shall see) will have shown close dependancy with *a subject of enunciation*.

But that's not all. When pursuing the meanings of noise to its limits, one might find oneself, like in a Mobius strip, traveling at the opposite side. When José Díaz Nafría writes that '[t]his means that through *metonymies* and *metaphors* the term has gradually adapted itself, as far as possible, to various and collective uses and interests', he seems to be almost exactly, word for word, agreeing with what I have just stated above about noise: remarkably, however, the term he is describing here is not noise but that one commonly considered its precise opposite: *information*. This apparent paradox, already unsurpassably reviewed by Malaspina, is precisely what the Shannon event addresses.[5]

So then, to repeat: which noise is *this* noise I am referring to? Who, or what, are its subjects? The question being not "who speaks?" But rather: "who, or what, is making *noise*?" As it happens, noise seems to be, in and of itself, a sound trope for the Subject. But then again: *which subject*?

Subjects (ritornello)

To recap: a subject is neither a substance nor a given; a subject is induced by a chance

---

5 José Díaz Nafría, 'What is Information? A multidimensional concern', *tripleC* 8:1 (2010), pp. 77-108 (p. 78). Furthermore, as Díaz Nafría adds, 'the very concept of "information" puts forward deep and challenging questions. Just one binary digit may tell us if the universe is about to collapse, thus being very informative, and all millions of terabits on the web (measured in a Shannon's sense) may also be generated by the whim of electrons in a rheostat, therefore being uninformative' (ibid).

encounter with an event; events will have happened in art, politics, science and love; events are unpredictable, illegal, a-logical, unprovable for the situation wherein they happen; a subject affirms the event and forces a new logic into the situation (a truth); there are (artistic, political, scientific) truths; there is a philosophical space allowing for their composite thinking (Truth)—such is the subject, according to the Badiouian orthodoxy we started from. Following from this, and hopefully still consistent with its starting axioms, I reconfigured this same subject by making operative a notion of education as fidelity to the *generic event* of *humanisation,* under the *generic condition* of *language*: I hence speculated that there is an *educational time* buttressing the subjects throughout their truth-processes (the Subject of education) and posited—aware of the hazard—that humanisation is, likewise, the *operator of fidelity* within education. In other words: the subject, *if induced,* will have affirmed the event of humanisation, conditioned by language-thought, under the watchful eye of education.

Now, in order that the consistency of this configuration obtains, the case must be made that this is a conception of language which will have had nothing to do whatsoever with either (1) *communication* and its horizontal relativity in the plurality *voices*; or with (2) an attempt occupy the place of Truth with the dogmatic vertical absolutism of the authoritative *Word.* Not yielding to either side of this false opposition, this is a notion, rather, of language as lack, as trauma: it is therefore opposed to *both* the schizophrenic democracy of voices and the psychopathic tyranny of the Word. I am following here— as I so often do—Sandino Núñez: language, if articulated from this 'zero degree of enunciation'[6] becomes

a structure that permits, in a single fold, both sense and its critique, permits knowledge

6 Sandino Núñez, *La Vieja Hembra Engañadora; Ensayos Resistentes Sobre el Lenguaje y el Sujeto* (Montevideo: HUM, 2015) p. 120. Núñez is of course adopting Barthes' term here.

and summons it to appear before the Other, permits belief and suspicion… it is the name that we give to a structure of overcoming [*una estructura de superación*], and has a lot to do with what we call *consciousness* as its own *transcendental illusion*, that I-language that denotes, as Benveniste used to indicate, not a simple interchangeable situational pronoun, but a *subject of enunciation* endowed with a certain position of transcendence and sovereignty in relation to the communicative circumstances, the expressive resources, the rhetorical or argumentative tools, the situational and pragmatic contexts.[7]

Núñez, in a passage of finely distilled Badiouianism, concludes his meditation with a staunch and elegant defence of both language and the subject:

> there is no subject-substance that we can consider as the source and the origin of interpretation and thought. But that does not make the subject dissolve in the mere order of the imaginary—the subject is not something simply "added by the imagination": the subject is necessary for language.[8]

In other words, we have subjects that, *if induced*, are the cause-effect of language. Also here present, loud and clear, is the Freudo-Lacanian trope of a subconscious being structured by (like) language:

> the mechanisms described by Freud as those of the primary process, by which the unconscious is governed, correspond exactly to the functions [that the school of linguistics of Saussure and Jakobson] believes determine the most radical axes of the effects of language, namely metaphor and metonymy—in other words, the effects of the substitution and combination of signifiers in the synchronic and diachronic dimensions,

---

7 Ibid; Benveniste, referenced here by Núñez, wrote that '[l]anguage is possible only because each speaker sets himself up as a subject by referring to himself as *I* in his discourse. Because of this, *I* posits another person, the one who, being, as he is, completely exterior to "me," becomes my echo to whom I say you and who says you to me. This polarity of persons is the fundamental condition in language, of which the process of communication, in which we share, is only a mere pragmatic consequence'; see Émile Benveniste, *Problems in General Linguistics*, trans. by Mary Elizabeth Meek, (Coral Gables, FL: University of Miami Press, 1971) p. 225.
8 Ibid p. 120.

respectively, in which they appear in discourse.[9]

Which takes us back to the opening paragraph: noise itself keeps flickering throughout its signifying field, from metaphor to metonymy, displaced here, condensed there—noise produces a noise-producing semantic field. As Serres first discovered, noise, by being immanently *protean*, is in excess of its own proteanism.

> Proteus—the god of the sea, a minor and marginal god, nonetheless a god of the first water, a god whose name stands at the beginning—is the shepherd who tends the oceanic flocks in the prairies of Poseidon. […] In these places of truth, Proteus undergoes metamorphoses: he is animal, he can be element, water, or fire. He's inert, he's alive. He's under the beam of the beacon, he's under the veil. He knows. He's a prophet, he possesses the gift of prophecy, but refuses to answer questions. He contains all information, admits no information. He's the possible, he's chaos, he's cloud, he's background noise. He hides his answers under the endlessness of information. […] Physics is Proteus chained. Background noise is this Proteus badly bound. The sea breaking free. Behold a myth, barely a myth, which grants us an epistemology that is globally accurate, locally rich and detailed. It doesn't grant it in a language all rigor-worn, but through a channel full of noise, murmuring, and images.[10]

In Serres' wonderfully evocative description, we have a peerless image of noise at its most mercurial, polymorphous, fickle and unstable—however, and to repeat a question posed earlier: what happens to this protean nature when it itself passes from

---

9 Jacques Lacan, 'The Subversion of the Subject and the Dialectic of Desire', *Ecrits*, pp. 671-702 (p. 676-77). Russell Grigg commenting on the above passage, explains that: '[t]his theory of metaphor and, to a lesser extent, of metonymy does a lot of work for Lacan. Condensation, one of Freud's primary process mechanisms, he says, is a type of metaphor, as displacement is of metonymy. The subject is a metaphor; the father of the Oedipus complex is a metaphor; the symptom is a metaphor; and love, too, is a metaphor'; see Russell Grigg, *Lacan, Language, and Philosophy* (Albany, NY: State University Of New York Press, 2008) p. 151. C.f. Chomsky's language as a 'mirror of the mind'; see Noam Chomsky, *Reflections on Language* (New York: Pantheon Books, 1975) p. 4.
10 Michel Serres *Genesis*, trans. by Geneviève James and James Nielson (Ann Arbor, MI: The University Of Michigan Press, 1995) p. 14.

background noise to *foregrounded subject*? This is altogether a rather more elusive matter, as it pertains precisely to the inconsistency of the threshold between information and noise. Serres, of course, is perfectly aware of this begged question: '[w]hat the narrative of Proteus does not tell is the relationship between chaos and form. Who is Proteus when he is no longer water and not yet a panther or a boar?'.[11]

The issue to be addressed, then, rather than the one posed by the question *which noise*, is: *at which moment* in this dynamic signifying system of substitution/combination, condensation/displacement, metaphor/metonymy is the word "noise" to be filtered (it can never be *captured*) and attended (it cannot be *observed*) in order to be echoed (it cannot be *deployed*) as a consistent concept (it can never be a *coherent* concept) without collapsing the potency of its fluctuation. And, not less importantly, which signification(s) is (are) to be ignored, discarded.

And, finally, once (if) noise resonates as a concept: how, or when, or where does it pass into information, form, *music*? (does it ever)? Is language, as the thought-operation described above, instrumental in this passage? (and, therefore—as implied in chapter 2—is so *education*?).

These questions, all of which point to the "order out chaos" trope are, in Serres' view, left unanswered by simply invoking the figure of Proteus. And undoubtedly one of the noisiest hinges wherein the passage from chaos to form is at its most symptomatic, is that one separating, or connecting, *music* and *noise*.

On this point a short clarification might be in order. As mentioned in the Preface, this whole research project has been conditioned by a musical practice: however, my purpose throughout this work has been to attend to noise neither in its mere opposition to *music*

11 Ibid.

(though that might have been indeed the initial trigger),[12] nor to simply reduce noise to the aural domain. Somehow building on Malaspina's "epistemological gesture", my intention is to subsume the *music|noise* border (which is purely contingent and only one of many borders), into an enquiry that posits noise as something like a *generic connector-interrupter*: noise as a notion that allows to think passages not only between *epistemological* fields—as Malaspina masterfully does—but passages also *filtering through* various ontological, phenomenological and pedagogical realms of thought—something which Malaspina purposely avoids.[13]

Having said all that, and considering that the knot *language-noise-music* is as impossible to untie as it is fundamental to my argument, a short detour onto the music esplanade might be in place.

A sounding cogito

Probably since Schopenhauer and Nietzsche, much has been written about music being somehow isomorphic, or even homeomorphic, with the temporal flux of a subjective inner state—as a sort of nonverbal "sounding cogito", so to speak. An utmost modern example of this position we find in Suzanne Langer's philosophy of music, its Whitehead-influenced processism and original, innovative vitalism—anticipating Deleuze's—mostly misconceived as some sort of quirky version of resemblance theory within analytic quarters, and curiously unesteemed within the Sound Studies creed. In a

---

12 Yet another aspect in which my project resonates with Malaspina's: 'although noise music and noise art are what opened my mental shutters to the prospect of thinking about noise, this book is about neither, leaving this avenue open for future projects' (EN p. 11).

13 Indeed, Malaspina's 'is predominantly an epistemological enquiry, rather than an ontological one [furthermore] the problem of epistemological noise, as posed here, is ultimately co-extensive neither with a phenomenology of noise, (because the question posed here starts from Shannon's counter-intuitive relation between information and noise), nor with its cultural history, (insofar as it focuses on the conceptual implications of thinking about noise).' Ibid.

passage beaming with Bergsonian overtones, Langer writes that

> the elements of music are moving forms of sound [which do so in] a realm of pure
> *duration* [neither of which are] an actual phenomenon […]. [It is a duration] completely
> incommensurable with the progress of common affairs. Musical duration is an image of
> what might be termed "lived" or "experienced" time—the passage of life that we feel as
> expectations become "now," and "now" turns into unalterable fact.[14]

In other words, as Trevor Wishart explains, 'in its articulation of the time continuum of concrete experience, [music] corresponds directly with the continuum of our experiencing, the continuous flux of our response-state.'[15]

If Langer's influence on Wishart is openly admitted by the latter, the obvious complementary referent here is Deleuze. Indeed, one cannot but describe Langer's philosophy of music—with its focus on flux and the embodiment of temporality—as proto-Deleuzian.[16]

The retroactive connection between Langer and Deleuze becomes evident, for example, when reading the following passage from the latter's book on Bacon:

> '[c]ertainly music traverses our bodies in profound ways, putting an ear in the stomach,
> in the lungs, and so on. It knows all about waves and nervousness. But it involves our
> body, and bodies in general, in another element. It strips bodies of their inertia, of the
> materiality of their presence: it *disembodies* bodies.'[17]

---

14 Suzanne Langer, *Feeling and Form: A Theory of Art* (New York: Charles Scribner's Sons, 1953) p. 109.
15 Trevor Wishart *On Sonic Art* (Amsterdam: Harwood Academic Publishers, 1996) p. 17.
16 Langer's philosophy of music is still to find its deserved status as a proper tributary to that pond of neodeleuzianism which is contemporary Sound Studies. Edward Campbell provides a rare counter-example, when noticing that '[i]f Langer pre-dates Deleuze in telling us that time becomes palpable in music, Deleuze goes further to state that not "time" but a multiplicity of "times", all kinds of mixed times, become palpable in music.' Edward Campbell, *Music After Deleuze* (London: Bloomsbury, 2013) p. 130. One cannot help noticing that, Campbell's brief note notwithstanding, this 'pre-dating' of Deleuze by Langer is as yet scantily acknowledged by the Deleuzian vulgate; a relatively recent interest in Whitehead within the community might change all this.
17 Gilles Deleuze, *Francis Bacon: the Logic of Sensation*, trans. by Daniel W. Smith (London & New York:

Deleuze is here comparing the affective differences between painting and music, wherein—historically at least—music seemed to always gain the upper hand:

> [i]n a sense, music begins where painting ends, and this is what is meant when one speaks of the superiority of music. […] When music sets up its sonorous system and its polyvalent organ, the ear, it addresses itself to something very different than the material reality of bodies. It gives a disembodied and dematerialized body to the most spiritual of entities.[18]

If the meditations on Bacon provided Deleuze with the optimal philosophical ground for him to discourse on the divergent aspects of the visual and the sonorous, we can nonetheless sense the same notion emerging in the earlier *A Thousand Plateaus*, where he ascertained with Guattari that

> [t]here is surely no question here of declaring a given art supreme on the basis of a formal hierarchy of absolute criteria. Our problem is more modest: comparing the powers or coefficients of deterritorialization of sonorous and visual components. It seems that when sound deterritorializes, it becomes more and more refined; it becomes specialized and autonomous. Color clings more, not necessarily to the object, but to territoriality. When it deterritorializes, it tends to dissolve, to let itself be steered by other components.[19]

For Deleuze and Guattari, the power of sound is owed to 'a machinic phylum that operates in sound and makes it a cutting edge of deterritorialization.'[20] "Sound"—which in this context, I would argue, is a term perfectly interchangeable with "noise"—carries, by way of its own materiality, a power to deterritorialise and to articulate the

---

Continuum, 2003), p. 54.
18 Ibid. pp. 54-5.
19 Gilles Deleuze & Felix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. by Brian Massumi (Minneapolis, MN: University of Minnesota Press, 1987) p 347.
20 Ibid. p 348.

true temporality of *Aeon*, 'it is a question of a freeing of time, *Aeon*, a nonpulsed time for a floating music'[21]. It is, however, a power and a deterritorialisation that, for Deleuze and Guattari, 'does not happen without great ambiguity', bringing with it the hazard of hypnosis, and of the fascistic appropriation of the ritual power of sound:

> sound invades us, impels us, drags us, transpierces us. It takes leave of the earth, as much in order to drop us into a black hole as to open us up to a cosmos. It makes us want to die. Since its force of deterritorialization is the strongest, it also effects the most massive of reterritorializations, the most numbing, the most redundant. Ecstasy and hypnosis. Colors do not move a people. Flags can do nothing without trumpets. Lasers are modulated on sound. The refrain is sonorous par excellence, but it can as easily develop its force into a sickly sweet ditty as into the purest motif, or Vinteuil's little phrase. And sometimes the two combine: Beethoven used as a "signature tune." The potential fascism of music.[22]

Which is why, for Deleuze and Guattari, 'music is plugged into a machinic phylum infinitely more powerful than that of painting: a line of selective pressure.'[23]

Deleuze and Langer's proto-sound-studies are, of course, only one side of the coin: music phenomena have also variously been depicted as something like a grammar without semantics. If this is a view mostly expounded by analytic schools of thought, strongly grounded on empirical data provided by music cognition, cognitive musicology and the like (of which Fred Lerdahl and Ray Jackendoff's influential *Generative theory of tonal music* is the prime exponent),[24] one of the main proponents of this view—though

---

21 Ibid. p 267.
22 Ibid. p. 348.
23 Ibid.
24 See Fred Lerdahl & Ray Jackendoff, *A generative theory of tonal music* (Cambridge, MA: MIT Press, 1996) and Fred Lerdahl & Ray Jackendoff, 'The capacity for music: What is it, and what's special about it?', *Cognition* 100 (2006), pp. 33–72.

coming from a completely different angle than that taken by anglo-american music-theory scientism—is Jacques Attali.

Noise, music & language

It would not be an exaggeration to say that Jacques Attali's *Noise: The Political Economy of Music* has had, specially in the years after its English translation in 1983 (it had its 12th reprint in 2014), an influence and repercussion of seismic proportions within contemporary music scholarship—seismic, that is, in relation to what could have been hardly the papillionic flutterings of a brief monograph committed by an economist with absolutely no previous business in musicological matters.[25]

I will return to Attali's serendipitous book in the next section: for now, I would like to briefly comment on Attali's not entirely prudent diatribe on the relation between music and language—this being just one of many divergences between his conception of noise and the one expounded here. Having said that, Attali does begin his reflections on language in terms somewhat acceptable to the conception of noise I am elaborating here; indeed, one cannot but agree with the fact that

> [a]ll music can be defined as noise given form according to a code (in other words, according to rules of arrangement and laws of succession, in a limited space, a space of sounds) that is theoretically knowable by the listener. Listening to music is to receive a message.[26]

However, the tirade that follows seems way off various marks: for a start, to Attali's assertion that 'music cannot be equated with a language' insofar as 'quite unlike the words of a language—which refer to a signified—music, though it has a precise

25 Jacques Attali, *Noise: The Political Economy of Music*, trans. by Brian Massumi (Minneapolis, MN: University of Minnesota Press, 1985).
26 Attali, *Noise* p. 25

operationality, never has a stable reference to a code of the linguistic type',[27] a Lacanian interlocutor could perfectly rebut something like "it is *not* the case that words always, necessarily refer to a signified (hence: S/*s*)". Secondly, when Attali writes that music 'is not "a myth coded in sounds instead of words," but rather a "language without meaning"' and that music has 'neither meaning nor finality'[28] one might be perfectly entitled to ask: what does Attali mean by *language*? (what does he mean by *meaning*?). That said, Attali is here pointing the finger at Lévi-Strauss—who is worth quoting at length on this point:

> [m]ythology and music have in common the fact that they summon the listener to a concrete form of union, with the difference, however, that myth offers him a pattern coded in images instead of sounds. In both cases, however, it is the listener who puts one or several potential meanings into the pattern, with the result that the real unity of the myth or the musical work is achieved by two participants, in and through a kind of celebration. The listener, as such, is not the creator of the music, either through a lack of natural ability or through the incidental fact that he is listening to someone else's music, but a place exists inside him for the music: he is, then, like the reverse, hollowed-out, image of a creator, whose empty spaces are filled by the music. The phenomenon is inexplicable, unless we admit that the non-composer has at his disposal and multiplicity of meanings, all at the ready and otherwise unused, which are attracted as if by a magnet to attach themselves to the sounds. Thus, the union of the sound proposed by the composer, and of the meaning present in a latent state in the listener, is constituted in a pseudo-language. When they encounter the music, meanings drifting half-submerged come to the surface and fit together according to lines of force analogous with those determining the patterning of the sounds. Hence a sort of intellectual and emotional coupling of the composer with the listener. They are both equally important,

27 Ibid.
28 Ibid.

since each represents one of the two 'sexes' of the music, whose carnal union is realized [p 655] and solemnized in the performance. Only then do sound then sense meet up with each other to create a unique entity comparable to language, since in this case too there is a coming together of two halves, one consisting of a superabundance of sound (in relation to what the listener could have produced on his own) and the other of a superabundance of meaning (since the composer had no need of it to compose his work).

In both cases, the supplementary sound and the supplementary meaning are in excess of the needs peculiar to language, which uses sounds other than musical ones (so much so that it has been said that an ear for language and an ear for music are in inverse proportion to each other), and which is never able to give expression to the ineffable emotions and meanings that music arouses in its devotees. We can say, then, that musical communication and linguistic communication both suppose the union of sound and meaning; but it is also true to add that the sounds and meaning exploited in musical communication are precisely those that are not used in linguistic communication. In this respect, the two types of communication are in a relationship of supplementarity.[29]

The first thing to notice in this fascinating text, is how much closer than expected seems Lévi-Strauss' structuralism to Langer's vitalist trope that music articulates a sort of temporal cogito, with the listening subject as 'the reverse, hollowed-out image […] whose empty spaces are filled by the music'. Lévi-Strauss, however, introduces a notion of 'pseudo-language'—and here the importance of the prefix should not be passed over, as Attali might have done. Because, even if Attali's gripe is (rightly) directed against some Lerdahl-Jackendoffian, cognitivist approach to music as a mere grammar-without-semantics, music-as-communication, music-as-an-evolutionary device and so on, he is

---

29 Claude Lévi-Strauss, *The Naked Man: Mythologies Volume 4*, trans. by John and Doreen Weightman (Chicago, IL: University of Chicago Press, 1981) pp. 654-55.

somehow missing something deeper in Lévi-Strauss' text: firstly, there is the pointer to myth, ritual and desire which is implied in the union of composer and listener ('a kind of celebration', an 'emotional coupling' in 'the coming together' of the 'two 'sexes' of the music'), and which brings the knot language-noise-ritual-music remarkably closer to Attali's unabashed Girardianism and, secondly, the possibility that even if, yes, Lévi-Strauss does oftentimes use the word 'communication', he specifically distinguishes the 'supplementarity' between musical and linguistic communication: clearly, for Lévi-Strauss, they are *not* the same thing, as Attali seems to imply.

Furthermore, when Attali moves on from Lévi-Strauss to Saussure, here too, there is much more potential for an elaboration of a concept of noise which, without contradicting his (i.e. Attali's) own basic tenets, could bring about noise's properly subjective (properly political) potential. Attali asserts that

> when Saussure wants to fit music into the double structure of language, by distinguishing within it a signifier and a signified, he superimposes a semantic system on sounds: "We do not see what prevents a given idea from being associated with a succession of sounds"; Derrida implicitly does the same thing when he writes that "there is no music before language." […] The musical message has no meaning, even if one artificially assigns a (necessarily rudimentary) signification to certain sounds, a move that is almost always associated with a hierarchical discourse.[30]

Even if we can wholeheartedly agree with Attali that 'the origin of music should not be sought in linguistic communication' and that, indeed, 'there is no convincing theory of music as language' and even that 'the attempts that have been made in that direction are no more than camouflages for the lamest kind of naturalism or the most

---

30 Atttali, *Noise*, p. 25; furthermore, by misquoting Derrida, Attali does not help his anti-linguistic cause: Derrida does *not* 'write' that 'there is no music before language': Derrida is here paraphrasing Rousseau's argument against the (pseudo) Pythagoreanism of Rameau. See Jacques Derrida, *Of Grammatology*, trans. by Gayatri Chakravorty Spivak (Baltimore, MD: Johns Hopkins University Press, 1974), p. 195.

mundane kind of pedantry',[31] what we are missing here is that the (cognitivist) conception of language that Attali is attacking is not the only possible one. If it is true that '[t]he musical message has no meaning, even if one artificially assigns a (necessarily rudimentary) signification to certain sounds'[32] *exactly* the same can be said of language as such: all there is is what Núñez calls a 'semantic pact', a pretence that there is some meaning somewhere at the end of the signifying chain.[33] And, just like the subject, it is a pretence which is necessary for the functioning of language, necessary for the subject (for critique, for politics, for Truth).

As already hinted above, it is *precisely* in the gap between signified and signifier, from that immanent, errant misalignment of meaning, and which is constitutive of both language and the subject, that a properly generic conception of noise might find its philosophical place and its pedagogical time. Noise *is* the signal emitted by the division of the subject. Or better: noise is a remnant background radiation leftover from such division.

The unconscious is structured like music

Tempting as it is to extract from all of the above a somewhat unbridled transitivity— viz., (one) the unconscious is structured like language, (two) music is like a language without semantics, (ergo) the unconscious is structured like music—it will suffice for now to point out something like an overlap, or an intersection *unconscious-language-music*. However, in this brief detour about the relationship between music and language (a relationship we will have to return to later), we notice that the word "music" has surreptitiously sneaked in, and that "noise" has, once again, slipped out of sight.

---

31 Ibid.
32 Ibid.
33 Núñez, *La Vieja Hembra Engañadora*, p. 19-22

However, we can always rely on Serres to bring noise back within hearing range, and this without loosing its language-related (subject-related) resonances:

> [w]hen languages know how to talk about themselves, they only create a further circle. Any metalanguage closes the loop of another course, slightly shifted, to be sure, but of the same form as those first little rhythmic poems. Metaphysics comes from the same whirlwind as music. Reflection, at whatever level, is a loop, sameness and difference, in the whirling whole of the organization of languages by themselves. The more one knows how to talk about languages, the better languages know how to talk. As long, of course, as they continue to hear the noise.[34]

Never allowing noise to fade out: not a trivial exercise, considering that the first step, as mentioned in the opening paragraph of this chapter, is to identify the appropriate (useful) signifying band within the disordered semantic vibrations of the word "noise", in order to filter from it a spectrum which would be suitably coloured for the task ahead.

But even before that, let us take a step closer and try to listen to the resonant carpet of significations, figurations, suggestions and symbolisations that the etymological narrative of the word noise emits.

4.1. Etymologies

The intention here is not to appeal to some higher etymological authority that will arise to dictate the terms of the subsequent conceptual elaboration—one should always keep in mind Pierre Vidal-Naquet's warning that 'no etymology can be singled out as

---

34 Serres, *Genesis* p. 70 (translation modified).

infallible (thank God)',[35] Instead, the function of the following etymological observations might be taken like that of a free-form prelude: to simply allow the etymological resonances of the signifier 'noise' (*bruit* in French, *ruido,* in Spanish, *rumore* in Italian, *Geräusch* in German, θόρυβος (*thórivos*) in Modern Greek) set the tone for whatever is to follow.

Noise, nausea, noxious

For the Old French *noise*, from which the same Middle English word derives, two etymological versions exist. A first one, more interesting than convincing, derives it from the Latin *nausea*, which descended from the Ancient Greek, ναυτία (*navtia*), ναῦς (*navs*, from the Proto-Indo-European **néh₂us*, "ship"), from which all of *navire* (French), *nave* (Spanish and Italian), also ναύτης (*navtis*: sailor, *nauta* in Latin, "nautical") derive. All of which arrive today with the same denotation: "seasickness", "disgust", "illness", and relating to certain nautical, or maritime origin.

This etymological narrative is one that provides Serres with a lexical vessel in which to navigate these deep speculative waters: reminiscent of Leibniz' meditative seaside walker,[36] Serres' suggestive prose evokes the white noise (or more precisely, the *pink* noise) of the ocean surf:

> [t]his word noise crosses the seas. Across the Channel or the Saint Laurence seaway, behold how the noise divides itself. In Old French it used to mean: noise, uproar and

wrangling; English borrowed the sound from us; we keep only the fury. In French we use it so seldom that you could say, apparently, that our language had been cleansed of this "noise." […] There, precisely, is the origin. Noise and nausea, noise and the nautical, noise and navy belong to the same family. We mustn't be surprised. We never hear what we call background noise so well as we do at the seaside.[37]

Greg Hainge, for his part, dedicates a whole chapter of his important work, *Noise Matters* to analyse the articulations (or lacks thereof) of noise in the psychotic episodes recounted by Roquentin in Sartre's *La Nausée*.[38]

Pace Serres and Hainge, this is not the only etymological interpretation. A second version connects "noise" to the Latin *noxius*: "harmful" or "guilty", and *noxa* ("damage", "hurt", "injury"), that is, *noxious*, *injurious*, "offensive", (in Spanish *nocivo* means literally "harmful", "poisonous"); *noxa* in turn comes from the Greek νέκυς (*nekys*) "corpse", "dead person", or, in plural, νεκύεσσι: the "spirits of dead bodies" (akin to νεκρός [*nekrós*] from where the prefix *necro-* derives).

So then, regardless of which account of this etymological double helix we accept, both strands end up denoting ideas of sickness, unwellness, damage, and even death. Here, one encounters the first of many multi-directional signposts, the possibility of exploring various diverging roads. One one side, the sense that George Canguilhem gives to the *pathological*, in its opposition to the *normal* (the junction taken by Malaspina):

(1) normal is that which is such that it ought to be; (2) normal, in the most usual sense of

---

37 Serres, *Genesis*, pp. 12-13

38 See *Noise Matters*, chapter 2, 'Noisea' (pp. 67-83); Hainge's work, together with that of Christoph Cox, both present consistent attempts to think ontologies of noise (even though Cox, unlike Hainge—who engages with the concept of noise head on—speaks more generally of a 'sonic ontology'). Hainge's ontology, however, is imbued with a Deleuzian relationality which renders it essentially divergent from the Badiouian subtractiveness I am trying to draw out here; likewise, Cox's ontology is permeated with the vitalism of fluxes, flows, effects, intensities, haecceities and the like (see for example: Christoph Cox, 'Sound Art and the Sonic Unconscious', *Organised Sound* 14:1 (2009), pp. 19–26 and 'Sonic Philosophy', *Artpulse* 16:4 (2013) artpulsemagazine.com [accss. 28 Jan 2016]).

the word, is that which is met with in the majority of cases of a determined kind, or that which constitutes either the average or standard of a measurable characteristic'.[39]

On the other side, the sense of *contagion* with which René Girard invests the notion of mimetic violence. These Girardian overtones Attali will incorporate in his own conception of noise. Indeed, in Girard's notion of violence we find the agency of all of the above elements, and a sense of pathological contagion: a viral violence which, fuelled by vengeance, becomes 'an interminable, infinitely repetitive process. Every time it turns up in some part of the community, it threatens to involve the whole social body'. Violence spreads like a disease, and death is its inevitable outcome:

> [d]eath is nothing more than the worst form of violence that can befall a man. It is no less reasonable, therefore, to lump together all the possible causes of death, pathological and otherwise, than it is to create a separate category for only one of them: sickness.[40]

Somewhat lacking in Girard's account, however, are the many emancipatory-political possibilities that this infectious aspect of noise implies. If Attali is widely credited to have extensively addressed this issue, it is Malaspina, however, who seems to have more accurately pinpointed it:

> [w]hen noise is thought in epidemiological terms and presented as parasitic upon the conscious processes of perception of its host or, importantly, host population, then what we are potentially dealing with is a bio-politics of noise in the Foucauldian sense. The critical problem is thus not to determine noise 'in itself' or even 'for us', but emancipation: because it concerns the power of judgement and the power of control over its pre-cognitive ground.[41]

39 Georges Canguilhem, *The Normal and the Pathological*, trans by Carolyn R. Fawcett and Robert S. Cohen (New York: Zone Books, 1991), p. 125
40 René Girard, *Violence and the Sacred* (London: Bloomsbury, 2013) pp. 34-35.
41 EN p. 167

In any case, if Attali's conception of noise—i.e. as an encoded form of ritual murder—proceeds from this Girardian notion of violence, the fact remains that noise, considered on its own (non-codified) materiality, *can* be harmful to the body: acoustic science has determined the Sound Pressure Level (SPL) at which sound becomes painful and damaging, what is called the threshold of pain (values varying between 120 dbSPL and 140 dbSPL). Sound of course is now used as a burglar deterrent; a more sinister development of this aspect is the known fact that loud music has been used by CIA, MI6 and Mossad for so-called "no-touch" interrogation techniques (or, to put it plainly, for music-torture),[42] and there has been increasing research on what is described in military lingo as USW: *Sonic and ultrasonic weapons* (sonic grenades, mines or bullets) which use extremely high powered sound waves to maim or even kill enemy combatants. US police forces have already used Long Range Acoustic Devices (LRAD), or "sound cannons" on various occasions, more recently during the Dakota Access Pipeline protests.[43]

All of this, of course, is the *noise of the state*, in its most distilled, brutal form; as such, it appears as close as it can to a subject-constructing *noise*, showing (like any other simulacrum) a terrible morphological semblance with it, inasmuch as it identifies the evental possibilities inherent in noise. Nonetheless, by utilising noise in this way, the state

---

42 See for example: Justin Caba, 'Torture Methods With Sound: How Pure Noise Can Be Used To Break You Psychologically' (2015) <https://www.medicaldaily.com/torture-methods-sound-how-pure-noise-can-be-used-break-you-psychologically-318638> [accss. 30 Apr 2018], Gwen Ackerman, 'Israel refuses to ban loud music torture' (12 Jan 1998) <https://www.questia.com/article/1G1-60847881/israel-refuses-to-ban-eloud-music-torture> [accss. 30 Apr 2018], 'Iraq: Torture not isolated: independent investigations vital', *Amnesty International*, (30 Apr 2004) <https://web.archive.org/web/20071013143507/http://web.amnesty.org/library/index/engmde140172004>[accss. 30 Apr 2018], Suzanne Cusick, 'Music as Torture/Music as Weapon', *Trans: Revista Transcultural de Música* 10 (2006)<https://www.sibetrans.com/trans/articulo/152/music-as-torture-music-as-weapon>[accss. 13 Mar 2019].

43 Matthew Weaver, 'G20 protesters blasted by sonic cannon', *The Guardian* (25 Sep 2009), <https://www.theguardian.com/world/blog/2009/sep/25/sonic-cannon-g20-pittsburgh>[accss. 24 May 2018]; 'Watch: Shots reportedly fired, 141 arrested at Dakota Access Pipeline protests', *The Seattle Times* (28 Oct 2016)<https://www.seattletimes.com/seattle-news/environment/live-updates-from-the-dakota-access-pipeline-protests-oct-27>[accss. 24 May 2018]. John Hamilton, for his part, sees a deeper, anthropological connection between music and torture: see John T. Hamilton, 'Torture as an Instrument of Music', *Thresholds of Listening: Sound, Technics, Space*, ed. by S. van Maas (New York: Fordham University Press, 201), pp. 143–52.

substantiates this potential—in archetypical fascistic manner—obliterating any possibility of either event or subject ever happening.[44]

Bruit, rumore, θόρυβος (thorivos)

The Modern French *bruit* itself brings an interesting semantic baggage. The Old French past participle of *bruire*, has a clear origin in the vulgar Latin *brugitus*, a variation on the Latin *rugitus* (*rugido,* "*roar*"), which comes from the Ancient Greek ἐρεύγομαι (*ereúgomai*, "belch"), akin to ὀρὔμαγδός (*orumagdós*, "noise"), and also related to ὠρῡγή (*ōrūgḗ*, "*roaring*", "noise", "howl"). All of these words, including the German *Geräusch* (which is derived from the Proto-Germanic *rūskōną*) share the same Proto-Indo-European root **hₔrewg-* (or **rAwə-*, to "shout", to "roar"); note also that from this same root comes the Latin *rūmor* ("common talk"), which derived in *rumore*, i.e. the modern Italian term for "noise" in the technical sense, rather than the English (or Spanish) sense of "*rumour*" or "gossip". The Spanish *ruido* (also the term used within the technical framework) comes from the same root.

The Modern Greek θόρυβος (*thorivos)*, remained unchanged from its Ancient origin: akin to θροέω (*throeō*), or more likely, to τύρβη (*tirbē*), it will lead to the Latin *turba* ("mob", "crowd", "uproar", "tumult", "disorder", related to the Germanic "storm"); these all share the Proto-Indo-European root **(s)twer-* and **(s)tur-* (to "swirl", "twirl", "rotate", "move around").

We can sense in these sets of connotations a common element: that of the crowd, the mob, even the theatrical audience. Serres, once again, eloquently brings home this point: not only from the perspective of the nauseous subject, a version of

---

44 And, let's not forget, the invention of the noble Apollonian lyre was achieved via the evisceration of an innocent tortoise, performed with the most cruel cynicism by Hermes himself.

Roquentin, or even worse, of Pentheus who, dismembered by the Bacchic mob, becomes a subject in and through the *sparagmos* [σπαραγμός] at Mt. Cithaeron:

> [a] crowd, a swarm, an army, a herd, a battalion, the pitched multiplicity, howling and motley with shouts, rushes toward us, rushes toward me, toward me alone, me the victim, bowed down, safe, tomorrow, before the altars.
>
> The noises of space, the colors of the world are coming toward me. I am plunged here and now in colors and noises to the point of dizziness. Here and now means that a flux of noises and colors is coming at me. I am a semiconductor, I admit it, I am the demon, I pull among the multiplicity of directions the direction that, from some upstream, comes at me.
>
> This crowd comes at me, it threatens to knock me down, to trample me, to throw me under it. Then and only then am I a subject. I am thrown under the multiple. Prostrate beneath the waves of noise, I am a castaway of perception. I am swallowed up in space, drowned in its murmuring, the multiple always overflows me. I am a subject only when I am on the verge of fainting, dying.
>
> In other words: the crowd comes at me, the mob knocks me down, dismembers me, cuts me up, I am going to see the open heavens.
>
> Knowledge is born of this danger of death.[45]

Apart from the notion, also elaborated by Deleuze, about knowledge arising as a violence, we have here the first of many encounters with that seemingly obvious association between noise and the Dionysian; interestingly though, as Girard observes, Dionysius' guise as the mob is what directly relates him to the auditory realm:

> [u]nder the name of *Bromios*—the Noisemaker, the Earthshaker—Dionysus presides over disasters that have nothing to do with the thunderstorms and earthquakes beloved of nineteenth-century scholars but that in fact always involve a mob impelled by sheer

---

45 Serres, *Genesis* p. 66.

panic to the performance of extraordinary acts.[46]

It is here, one might say, that the direct connection between noise and ritual violence—which Attali fails to evince even though it is the support of his whole argument—must reside.

However, even if Girard reaches 'the inescapable conclusion that *Dionysus is the god of decisive mob action*',[47] from this it does not immediately follow that such action is solely destructive. Indeed, the connection between noise and the Dionysian is, as we shall see, not so clear-cut as it might superficially appear: not only in that the binary Apollonian-Dionysian as a function of order/disorder does not always obtain, but in that Dionysius himself is a bringer of order:

> it should be easy to see why such a god is called for and why he is revered. He claims legitimacy not from his ability to disturb the peace but from his ability to restore the peace he has himself disturbed—thereby justifying, a posteriori, having disturbed it in the first place. Divine intervention is transformed into legitimate anger against a blasphemous hubris, which, until the crucial display of unanimity, seemed to implicate the god himself.[48]

All in all, it seems that noise, in the figure of the frenzied violence of the mob—the Latin *turba*—manages *both* to produce *and* dissolve difference, to create *and* destroy relation, to bring forth the one *and* multiplicity.

> The Latin language creates a diversion. The turba of Lucretius, a stormy mass of diverse elements in disorder, given over to shocks, to impacts, to the fray, a chaos given over to jostling, is a crowd, it is a mob. The physical chaos of circumstances, where the primal turbo spirals itself along, is, if I may be so bold, isomorphic with the raging crowd of

---

46 Girard, *Violence* p. 142.
47 Ibid.
48 Girard, *Violence* p. 142

bacchantes, all set for the diasparagmos, or the Roman crowd or any crowd. Chaos makes the same noise as the social mob.

Everywhere we go, we have to go back to multiplicities. For the classed or the classifying life, we go back to a prebiotic soup, a fluctuating mix. Multiplicities: inert ones, living ones, social ones. Can we imagine a chaotic and primal multiple with respect to knowledge, a confused murmur, a noise that precedes and underlies the classified encyclopedia? I would like to hear the clamor of intellection in its nascent state, the rage to know.[49]

The Lain *turba* is, of course, the origin of the word "turbid" and "perturbed", as an opposition to clarity and stillness. Here we can glimpse the first appearance of a crucial element (for some, *the* crucial element) operating a negative definition of noise: *information*. Malaspina opens her seminal work with precisely this idea: '[i]t has become commonplace to use the word noise, almost with inverted comas, in a host of contexts unrelated to sound, often in opposition to information.'[50] This idea sets the tone for the main imperative driving Malaspina's whole argument: the avoidance of facile, commonplace oppositions when dealing with the signifier *noise*—or rather, to listen deeply into the (epistemological, political, psychological), origins of such cliched polarities.

Despite the ever more apparent complexity of the relation between information and noise, the latter is often taken for granted as the mere opposite of information, based on the intuitive analogy with acoustic noise disrupting communication. What risks being overlooked in this simplistic opposition between information and noise is a palimpsest, a rich layering of intuitive *notions* of the still and the perturbed, the clear and the *turbid*

---

49 Serres, *Genesis* p. 100
50 Malaspina, EN, p. 1.

(from Latin *turba*: crowd), opaque or confused.[51]

With respect to Dyonisius' epithet *Bromios*, such is the name that, in Euripides' account, the Bacchae hollered as they begged their leader to join them in their intoxicated, murderous rave.[52] Βρόμιος (*Bromios*), means, as Girard correctly points out, "the noisy, roaring, boisterous one" (from βρέμειν, to roar) which is why βρομεάζεσθαι (*bromeazesthai*), is "to rage like a Bacchante". This branch derives from the PIE root: *bʰrem- ("to make noise"), which evolved into the Proto-Germanic *bremaną ("to roar"), and the Gothic 𐌱𐍂𐌰𐌼𐌾𐌰𐌽 (bramjan), all of which of course leads to the Spanish *bramar*, cognate with French *bramer*, the Italian *bramire*, and the Old English *bremman* ("to roar, rage").

As for the Ancient Greek θόρυβος (*thorivos*)—which will have become the Modern Greek techno-scientific term for Noise—this is precisely the word that Aristophanes, in his grumble against the vulgarity of the Athenian '*theatrokratia*', uses when describing the noise of the clapping audience:

> raise loud waves of applause in his favour this day [θόρυβον χρηστὸν ληναΐτην], so that, at this Lenaean feast, the breath of your favour may swell the sails of his triumphant galley and the poet may withdraw proud of his success, with head erect and his face beaming with delight.[53]

Aristophanes' distaste of the noise produced by the lumpen 'waves of applause' seem to find a distant echo in Serres, for whom

---

51 Malaspina, EN p. 2.
52 θίασον, ὦ Βρόμιε Βρόμιε (Euripides, *Bacchae* 584).
53 θόρυβον χρηστὸν ληναΐτην, / ἵν᾽ ὁ ποιητὴς ἀπίῃ χαίρων / κατὰ νοῦν πράξας, / φαιδρὸς λάμποντι μετώπῳ. (Aristophanes, *Knights*, 547-50).

[s]peech catalyses and propagates the silent harmony from which it can then be removed. But the collective is quick to bury its harmony, grinding it up in the chaotic noise of applause. The gods are broken into tiny pieces in the palms of our hands.[54]

The (good) noise of speech, its delicate truth, can easily be drowned by the (bad) noise of populist ignorance.

Alarm, harmony, tone

The Ancient Greek ἀραρίσκω (*ararískō*), "to join", "to fasten together", leads to the Latin *arma* ("weapon") and from this came the Old Italian call to arms, *all'arme* ("to the weapons" from which the German *Lärm*—"noise"—derives). But most interestingly, and confirming the somewhat ambiguous and self-contradictory semantic forces contained in the field of significations projected by "noise", the above branches—i.e. the Hellenic ἀραρίσκω (*ararískō*) through the Romance/Germanic *alarma*, *allarme*, *alarme*, *alarm*, *Lärme*—all stem from the same Proto-Indo-European root, **h₂er-* (again, as in Ancient greek, "to fix", "to join", "to put together"); and this root, intriguingly enough, happens to be *conjointly* the seed of the Ancient Greek ἁρμονία (*armoníā*), issuing a superposed semantic field with the exact opposite charge, all its signifying vectors pointing in the antipodal direction. This antonymic semantic space is shared by the etymological line projected by the Ancient Greek word τόνος (*tónos*, "rope", "cord"), which through the Latin *tonus* and *sonus* derived the word "tone" and "sound," and all of them carrying the Proto-Indo-European root **ten-*: "to stretch".

Regarding the τόνος, its "tension", or its lack thereof, a fascinating political angle opens up when taking a closer look to the texts left by some grumpy critics of the 5BC theatrical avant-garde in Athens: its Phrygian sonorities (slack, effeminate) no more than

54 Serres, *The Five Senses*, p. 87.

the noisy excretion of the sagging *aretê* brought about by Periclean democracy (itself the cause of the Peloponnesian War debacle)—as Eric Csapo observes,

> [i]deology transferred all the virtues of Spartan discipline to the Dorian mode. As early as Pratinas (probably a late fifth- century lyric poet) the Doric mode is 'tense' (σὺντονος) while the Ionian mode is 'slack' (ἀνειμένος). The words refer in the first instance to the tenseness or laxness of a string on a musical instrument, but transferred to moral or military contexts they came to connote 'strict discipline', as opposed to 'flabbiness and dissolution'. When Aristotle compares two binarist tendencies, on the one hand to classify all political constitutions as varieties of 'oligarchy' or 'democracy', on the other to view all musical modes as variations on the Dorian and the Phrygian, his own only-slightly-less-reductive trinary solution, includes a comparison of oligarchic constitutions to the 'tenser and more masterful modes' (συντονωτέρας καὶ δεσποτικώτερας), viz. the Doric 'varieties', and a comparison of all the democratic constitutions to the 'slacker and softer' varieties (τὰς δ'ἀνειμένας καὶ μαλακάς), viz. the Phrygian (*Pol.* 1290a). To make a constitution συντονωτέρας meant to key it up from democracy towards oligarchy (1304a21).[55]

Finally, *both* the contemporary significations of the English word "sound" are present already in its ancestral Proto-Indo-European roots: **swent-* ("healthy") and **swen-* ("to

---

55 Eric Csapo, 'The Politics of the New Music', *Music and the Muses: The Culture of 'Mousikē' in the Classical Athenian City*, ed. by Penelope Murray & Peter Wilson (Oxford: Oxford University Press, 2004), pp. 207-248 (pp. 243-44). It might not be completely fruitless to observe with regards to this that, in the line threading through the prevalent narrative of Western music historicity, such "tension of the tone" kept giving way (recall its snapping in the post-Wagnerian revolution of the Second Viennese school: we can still hear the background noise produced by such crack in what contemporary music theory refers to as 'atonality'. Schoenberg, however, was himself too much of an alert thinker to let himself be conned by such a lazy descriptor: 'to call any relation of tones atonal is just as farfetched as it would be to designate a relation of colors "aspectral" or "acomplementary". There is no such antithesis. […] If one insists on looking for names, "polytonal" or "pantonal" could be considered. Yet, before anything else, we should determine whether it is not again simply "tonal"' (Arnold Schoenberg, *Theory of Harmony*, trans. by Roy E. Carter (Berkeley & Los Angeles: University of California Press, 1978), p. 432; for an insightful commentary, see Richard Norton, *Tonality in Western Culture: A Critical and Historical Perspective* (University Park & London: The Pennsylvania State University Press, 1984)).

make a sound"). The above set of derived terms ("tone", "tonic", "tense", "sound", etc), seem to relate the acoustic to the hygienic: something that is healthy because it is sounding, something that sounds because it is healthy.

The sublime, the ugly, the abject

Also worth noticing is the grouping together of elements that only later would be (extensionally) included in the set labeled *the sublime*: fear, pain, danger, awe, *the ugly* (see Aristotle's representation of the ugly as producer of pain, see Augustine's ugly as non-existent, see, of course, Burke's separation of the beautiful from the sublime, the horror produced by darkness, uncertainty and confusion—i.e. by noise—his introduction of the notion of pleasure in horror and pain:

> [w]hatever is fitted in any sort to excite the ideas of pain and danger, that is to say, whatever is in any sort terrible, or is conversant about terrible objects, or operates in a manner analogous to terror, is a source of the sublime; that is, it is productive of the strongest emotion which the mind is capable of feeling.[56]

Moreover (and somehow not surprisingly), for Burke, the sublime can be effected by the auditory too:

> [t]he eye is not the only organ of sensation by which a sublime passion may be produced. Sounds have a great power in these as in most other passions. I do not mean words, because words do not affect simply by their sounds, but by means altogether different. Excessive loudness alone is sufficient to overpower the soul, to suspend its action, and to fill it with terror. The noise of vast cataracts, raging storms, thunder, or

---

56 Edmund Burke, *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful* (New York: P.F. Collier & Son Company, 1909–14), part I, n.7, 'Of the Sublime' <https://www.bartleby.com/24/2> (2001) [accss. 30 Mar 2018].

artillery, awakes a great and awful sensation in the mind, though we can observe no

nicety or artifice in those sorts of music. The shouting of multitudes has a similar effect;

and, by the sole strength of the sound, so amazes and confounds the imagination, that,

in this staggering and hurry of the mind, the best-established tempers can scarcely

forbear being borne down, and joining in the common cry, and common resolution of

the crowd.[57]

Noticeable here, once again, is the presence of those ancient signifiers: the pink

noise of massive waters, the angry mob, the weapon ('the noise of vast cataracts […] the

shouting of multitudes […] artillery…').

The *sublime* intersects with that other set including notions related to the Freudian

'uncanny' (*das Unheimliche*),[58] Clément Rosset's 'terrifying object'[59] and Julia Kristeva's

'abject' (*l'abjection*). Most striking is Kristeva's association of the abject to something like a

subjective distress, alarm, or *anxiety* produced by the dissolution of boundaries, form and

established knowledge: '[i]t is thus not lack of cleanliness or health that causes abjection

but what disturbs identity, system, order. What does not respect borders, positions, rules.

The in-between, the ambiguous, the composite.'[60] We have in Kristeva's account a

crucial signifying knot: one tying noise (viz., as 'what disturbs identity, system, order'),

with its hermetic quality ('what does not respect borders'), which provides for its protean

liminality ('the in-between, the ambiguous').

And, once again, every one of these figures are what I have been describing as the

57 Ibid, part II n.18, 'Sound and Loudness'.

58 See Sigmund Freud, 'The "Uncanny"', *The Penguin Freud Library, Vol. 14: Art And Literature: Jensen's 'Gradiva', Leonardo Da Vinci And Other Works*, trans. by James Strachey, ed. by Albert Jackson (Harmondsworth: Penguin, 1990) pp. 335-76.

59 See Clément Rosset, *L'objet Singulier* (Paris: Éditions de Minuit, 2014), pp. 37-42.

60 Julia Kristeva, *Powers of Horror: An Essay on Abjection*, trans. by Leon S. Roudiez (New York: Columbia University Press, 1982), p. 4.

symptoms of the void, a noisy leftover that filters through in the interstices of language, appearing in the cracks of the Symbolic's insufficient attempt to structure the Real. These 'terrifying objects' are themselves phantasmatic emergences of language and thought.

All these apparitions are, therefore, in a deep sense, *logical*. They are as aberrant as they are inevitable, as Poincaré knew very well when observing that 'logic sometimes makes monsters.'[61] Such logical aberrations appear, not so much in *opposition* to thought, but *as a result of the thought process itself*, producing even here, at its most abstract level, mathematical pathologies—thought-monstrosities which are indistinguishable, as Benoit Mandelbrot notices, from mathematical *noise*.[62]

Rhythm

As for the widespread etymology relating the notion of noise with that of *rhythm* (not dissimilar to *nausea* in its relation to the nautical flow of waves and tides),[63] it might be worth quoting Émile Benveniste's exhaustive account (which, it must be said, immediately puts Deleuzian notions of rhythm—inevitably attached to the concept of *flow*— into perspective):

[a]n identical answer is given by all dictionaries: ῥυθμός is an abstract noun from ῥεῖν 'to

---

61 Henri Poincaré, 'La Logique et L'intuition dans la Science Mathématique et dans L'enseignement', *L'Enseignement mathematique* 1 (1899), pp. 157-62 (pp. 158-9); also in *Œuvres XI* (Paris: Gauthier-Villars, 1955-1956) pp. 129-34, cited in Morris Kline, *Mathematical Thought from Ancient to Modern Times, Volume 3* (New York & Oxford: Oxford University Press, 1972) p. 973.

62 Fascinatingly enough, Mandelbrot relates this mathematical noise with none other than Cantor's Set, so dear to Badiou; the paradoxical properties of Cantor's continuum—uncountability, self-similarity, fractal dimensionality—which I to refer to as "the noise of the continuum", Mandelbrot alluringly names 'Cantor dust'; see Benoit B. Mandelbrot, *The Fractal Geometry of Nature* (New York: W. H. Freeman & Co., 1983), especially chapter 8, 'Fractal Events and Cantor Dust', pp. 74-83.

63 The *Wiktionary* entry for 'rhythm', for example, reads: 'ῥυθμός (rhuthmós), or Ionic ῥυσμός (rhusmós), from ῥέω (rhéō, "I flow"), corresponding to Proto-Indo-European *sru-dʰmos, from *srew- ("to flow")'. https://en.wiktionary.org/wiki/%E1%BF%A5%CF%85%CE%B8%CE%BC%CF%8C%CF%82#Ancient_Greek.

flow,' the sense of the word, according to Boisacq, having been borrowed from the regular movements of the waves of the sea. […] And what, really, could be more simple and satisfying? Man has learned the principles of things from nature, and the movement of the waves has given rise in his mind to the idea of rhythm, and that primordial discovery is inscribed in the term itself. […] But the semantic connection that has been established between "rhythm" and "to flow" by the intermediary of the "regular movement of the waves" turns out to be impossible as soon as it is examined. It suffices to observe that […] the sea does not "flow." Ῥεῖν is never said of the sea, and moreover, is never used for the movement of the waves.[64]

Etymological vector sum

What we have here, then, are two overlapping semantic configurations, each with a multiplicity of opposing signifying charges: from the spatial notions of disorder, harm, injury we arrive to the temporal-aural notions of murmur, scream, roar; from the individual harm, injury, sickness to the collective tumult, crowd, mob; in the opposite direction indexed by the pair τόνος-ἁρμονία, we have the uniting, the joining together of the multiple into the one, its tensing, and its strict disciplining and prescription, and eventually a call to arms should such order be threatened, a call to arms justified by the appeal to strength and healthiness.

If noise, as everything else, is itself divided it itself seems to always-already appear as the negative side of such split. In the laying out of what Malaspina describes as a 'palimpsest of *concepts*, *notions* and *ideas*, noise always appears to occupy the negative place of a dichotomy, be it in that of order and disorder, of physical work and the

---

64 Benveniste, *Problems in General Linguistics*, p. 281.

dispersion of energy in the state of entropy, or of the norm and the abnormal.'[65]

> In other words, noise is at best associated with the absence of order, of work or of the norm—be it the statistical, moral or aesthetic norm—and at worst, noise is identified as a threat to the norm and subversive of work and order: a perturbation, a loss of energy available for work, a parasite.[66]

Considering that Malaspina is here taking a critical stance towards commonplace denotations of noise, the allusion to 'a parasite' might sound like a sideways critique of Serres (whose absence is screaming throughout the pages of Malaspina's otherwise exhaustive tome)—if this is so (something that I cannot substantiate) it would imply a loud (and indeed, welcomed) dissonance with my Serresian approach. On the other hand, the problematising of the vulgar notion of noise as that which is 'subversive of work' is entirely consonant with the position I am taking here: namely, that the subjective truth procedure, supported by education, is a producer of noise as it concurrently engages in work. Pedagogical subjectivity *is* work, in the true thermodynamical sense of the term.[67]

4.2. Extensionalities

The opening question, though, remains unanswered: *Which noise*? My intention in the following paragraphs is to set the sign "noise" to what Núñez would call its 'referential mode': that is, to bring out, not its 'authenticity' as a valid pointer to a signified *thing*, but its 'referential character'—in other words, to deploy (the sign, thing, word) as 'a

---

65 EN p. 3.

66 EN p. 3.

67 And quite literally so: at least 9.57×10^{-24} joules/degree per bit of acquired information, as established by the Landauer limit.

signifying knot within a complex structure of significations and social practices'.[68]

Just as an illustration: when Ben Jonson, writing in 1621, makes his Cockrel clown explain that '[t]he King has his Noise of Gypsies, as well as of Beardwards and other Minstrels',[69] is this not a symptomatic sign that—at least in this particular historico-cultural-political setting (viz., Jacobean court theatre practices)—the signifiers "noise" and "music", or (much more interestingly), "music-*maker*" and "noise-*maker*", seem to overlap their significations? At the very least, one has to accept that these 'significations and social practices' managed to co-exist, either dialectically or disjunctively, side by side.

From the aural to the spectral

In its most vulgar use, the word remains confined to its archaic auditory realm: noise merely means 'unwanted sound'. And it is within this aural usage where noise is at its maximal subjective dependancy, inasmuch as the utterance "this or that is noise", must be complemented with the question "who speaks?" for a properly contextual (pragmatic) space of meaning to be established (*unwanted* sound: who wants what, when? etc). As such, and from a Badiouian perspective, we are deep inside anti-philosophical territory.[70]

Moving diagonally onto the other end of the semantic space, we find ourselves in the opposite corner, determined by the unequivocal Word of Science. Here "noise" has a very precise, unambiguous definition, even if commuting to and from manifold specialisations: signal processing, statistics, statistical thermodynamics, quantum

---

68 Núñez, *La Vieja Hembra Engañadora*. p. 17.

69 Ben Jonson, 'A Masque of the Metamorphos'd Gypsies', *Works in Six Volumes: Volume 5* (London: J. Walthoe, 1716) pp. 374-417 (p 403).

70 Badiou writes in *Saint Paul* that '[f]or an antiphilosopher, the enunciative position is obviously part of the statement's protocol. No discourse can lay claim to truth if it does not contain an explicit answer to the question: Who speaks?' SP p. 17.

statistical mechanics, probability, acoustics, economics, communication theory, and its

formalised counterpart, information theory. In all of these contexts, noise essentially

indicates the presence of fluctuating, *unknown* (unwanted?) data, *randomly* modifying some

observed, *known* (wanted?) *signal,* this latter defined as a *function* supposed to convey

information about the behaviour and properties of some phenomenon.

The 'Glossary of Telecommunication Terms', issued by the US Federal

Standard (the *Federal Standard 1037C*), informs us that noise is one or all of five things:

> 1. An undesired disturbance within the frequency band of interest; the summation of
> unwanted or disturbing energy introduced into a communications system from man-
> made and natural sources. 2. A disturbance that affects a signal and that may distort the
> information carried by the signal. 3. Random variations of one or more characteristics
> of any entity such as voltage, current, or data. 4. A random signal of known statistical
> properties of amplitude, distribution, and spectral density. 5. *Loosely,* any disturbance
> tending to interfere with the normal operation of a device or system.[71]

From the point of view of science then, noise, all the while keeping its connotations of

undesirability, is a *spectral* phenomenon (it might be not without interest to note that,

somewhere along the line, a substitution of a visual connotation for its original, aural

one, has taken place).[72]

Within the family of scientific fields listed above, one might find noise defined as

a *stochastic process*, and oftentimes related related to notions such as *Markov chains*,

Brownian motion and *random walks*. The *Cambridge Dictionary of Statistics*, for example,

defines "noise" as '[a] stochastic process of irregular fluctuations'.[73] A stochastic process

---

71 'Noise', *Federal Standard* 1037C https://www.its.bldrdoc.gov/fs-1037/fs-1037c.htm [accss. 9 May 2018].

72 Spectrum is Latin for "apparition", "image"; it is a descendant of the Proto-Indo-European spéḱyeti ("to keep looking at"), which is also an ancestor of the Ancient Greek σκέπτομαι (*sképtomai*: "to examine"). One wonders if this passage from the aural to the visual is not saying something about science itself.

73 'Noise', *The Cambridge Dictionary of Statistics* (Fourth ed.), ed. by Brian S. Everitt & Anders Skrondal (Cambridge: Cambridge University Press, 2004) p. 301.

is, very simply put, a collection of random variables.[74] A Markov chain is an example of one, its particularity being that it is a sequence of events wherein the probability of each event depends solely on the state of the previous one—in other words, 'their characteristic feature is the existence of well-defined transition probabilities *independent of the previous history of the system*.'[75] As for random variables, these are the outcomes of a random (i.e. unordered, unpatterned, unpredictable) phenomenon. The domain of the random variable is usually neither infinite nor uncountable—the toss of a coin, for example, has two possible outcomes: what is uncertain is the physics that makes one or the other happen (become actual)—the domain itself has a cardinality of two possibilities: heads or tails.

From all this, we can start mapping some conditions for the outline of an ontology: Noise, in the sense that I am trying to refer to here, belongs to the uncertainty itself, not to the outcome (which belongs to the domain of truth).

Attali's borrowings

As mentioned above, Attali's conception of noise imports a plethora of connotations from information theory:[76] noise will 'attack' the existing codes of a (economic-political-cultural) network: noise is an inevitable 'mutation' (ie an error) in the transmission of a message within the channel used by a dominant code, and which virally takes over the channel-network, itself becoming dominant and so on—Attali's writing in *Noise* is

---

74 More formally, a stochastic process is a series of random variables, {}, where *t* assumes values in a certain range T. In most cases is an observation at time *t* and T is a time range. If T = {0, 1, 2, …} the process is a discrete time stochastic process and if T is a subset of the nonnegative real numbers it is a continuous time stochastic process. The set of possible values for the process, T, is known as its state space. See 'Stochastic process', *The Cambridge Dictionary of Statistics* p. 415; see also David R. Cox & H. D. Miller, *Theory of Stochastic Processes* (London: Chapman and Hall/CRC Press, 1977) and *The Oxford Dictionary of Statistical Terms*, ed. by Yadolah Dodge (Oxford: Oxford University Press, 2003).
75 llya Prigogine & Isabelle Stengers, *Order Out of Chaos: Man's New Dialogue With Nature* (New York: Bantam Books, 1984), p. 236 (original italics).
76 See Attali, *Noise*, pp. 26-27.

permeated with the lingo of information theory:

> [a] network can be destroyed by noises that attack and transform it, if the codes in place are unable to normalize and repress them. Although the new order is not contained in the structure of the old, it is nonetheless not a product of chance. It is created by the substitution of new differences for the old differences. Noise is the source of these mutations in the structuring codes. For despite the death it contains, noise carries order within itself; it carries new information.[77]

It would be a not too inaccurate observation to say that Attali's is a noise that runs on a combination of information theory and Girard's anthropology of mimetic violence (a third propellant would be historical materialism—albeit in a soft, "third way" version).

Discernible in Attali's quote above some useful undertones appear: noise as subversion of the status quo, the resistance of the latter, the eventual substitution of its codes (one would say "logics"), the idea of noise carrying a new order, etc. Nevertheless, we also notice a crucial lack: Attali's noise might have borrowed plenty of its descriptive terms from information theory (code, message, network)—what it did *not* do is explore any line of inquiry involving *a Subject* (which, as noted earlier, might have still been consistent with Shannon's mathematical formalisations). This lack is not surprising, not only in that one would struggle to find any subject within the mimesis-desire-violence-ritual-sacred configuration that Girardianism bears (a scapegoat is never a subject), but in that, after all, Attali is much less a philosopher than he is an economist (not to say a banker).

Economy's pseudo-noise

---

77 Ibid p. 33.

Noise is certainly talked about within the domain of economics. Itself being a (pseudo) scientific contraption, economics borrows its conception from the above (properly) scientific formulations. However, and appropriately so, noise here acquires a bootstrapped, circular definition: economic noise is "inaccurate data", as opposed to the supposedly "accurate data" feeding back into the markets and in effect determining its (mis)functioning: the circularity is embedded in the term 'accuracy', which here simply masks the fact that economically "accurate" predictions overdetermine an outcome, which then retrospectively proves or disproves the truth value of such predictions). And this is not entirely surprising: this self-transcendence is what makes economics, as Jean-Pierre Dupuy has shown, one of many modern substitutions for the sacred (albeit a clumsy, deficient one).[78] Along similar lines, Malaspina asserts that 'finance provides a setting that demonstrates, like few others, how valuable it can be to look at the metaphorical latitude involved, when the idea of noise is converted from a scientific concept to a schema of thought'; such paradigm, Malaspina adds, allows for 'a new *esotericism*' to emerge which defers 'critical analysis of the internal dynamics of the financial sector to the presumed expertise of those in charge'.[79] In the end, for Malaspina,

> the obliqueness and viscosity of financial information becomes a form of efferent noise, meaning a self-generated uncertainty, adding itself to the basic contingency of pricing on the trading floor [...]. Although the mirage created by this vanishing act of exposure to debt is not what is usually meant by noise in finance, synthetic CDOs [collateralized debt obligations], together with the shadow banking system they generate, nevertheless add a dimension of uncertainty that is not essentially distinguishable from noise and

---

78 See Jean-Pierre Dupuy, *The Mark of the Sacred*, trans. by M. B. Debevoise (Stanford, CA: Stanford University Press, 2013), pp. 6-13.
79 EN p. 119.

which predictive models must strive to take into account.[80]

The noises of nature

As we have already noticed, Science has nudged the referential field of noise from the aural to the visual (and something promptly picked up by the visual arts, as Hainge has clearly shown).[81] Science has *coloured* noise: there is white noise, pink noise, blue noise, violet noise, black noise; there is brown noise too, though this is not a chromatic reference but a reference to the Brownian motion mentioned above.[82]

White noise, according to the *Cambridge Dictionary of Statistics*, is a '[t]erm often used in time series to refer to an error term that has expectation zero and constant variance at all time-points and is uncorrelated over time':[83] that is, void expectation, eternal variance, infinite un-correlation. Within the auditory domain, white noise refers to an acoustic random signal, containing all audible frequencies at equal intensities: in this sense, white noise may be referred to as the all-encompassing set of all possible frequencies. A purely theoretical construction, it resembles the universal set forbidden by Axiomatic Set Theory: therefore, if we are to admit the notion that *white noise contains itself*, we have already emerging here an ontological figure for the event, in Badiou's sense.[84] Besides, as we shall shortly see, white noise provides us with an appropriate

---

80 EN p. 127.

81 See *Noise Matters*, chapter 7, 'On Noise and Photography. Forest, Fuzz, Ruff', pp. 209-39.

82 See the *Federal Standard* 1037C: 'white noise' <https://www.its.bldrdoc.gov/fs-1037/fs-1037c.htm>
'pink noise' <http://www.its.bldrdoc.gov/fs-1037/dir-027/_4019.htm> 'blue noise'
<http://www.its.bldrdoc.gov/fs-1037/dir-005/_0685.htm> 'black noise'
<http://glossary.its.bldrdoc.gov/fs-1037/dir-005/_0649.htm> 'noisy white noise'
<http://www.its.bldrdoc.gov/fs-1037/dir-024/_3570.htm> 'noisy black noise'
<http://www.its.bldrdoc.gov/fs-1037/dir-024/_3569.htm>; see also: Duncan Geere, 'White, pink, blue and violet: The colours of noise', *Wired* (7 Apr 2011) <http://www.wired.co.uk/article/colours-of-noise> [accss. 9 May 2018].

83 *The Cambridge Dictionary of Statistics* p. 458.

84 'An event […] is the multiple composed of: on the one hand, elements of the site; and on the other hand, itself (the event)' (BE p. 506).

figure for the Bergsonian/Deleuzian *virtual*.

White noise, then, is the (infinite) set of the virtual aural. If there are inescapable differences between the Deleuzian conceptions of noise dominant in sound studies and the Badiouian notion I intend to develop, the use of the word "virtual" is here entirely justified as, in actual fact, we cannot hear white noise. Not only in that our hearing bandwidth is not infinite (it is bounded at around 20 Hz in the low end to about 20kHz at the higher limit) but in that hearing is logarithmic: we cannot perceive the constant power spectral density of white noise: it gets filtered by our hearing mechanism and becomes, in our subjective listening, pink noise, which has a power spectral density that is inversely proportional to its frequency. White noise is the *idea* of a signal containing all possible frequencies at equal intensity: pink noise is a sound in which *each octave* has equal intensity.

As for brown noise, this is the signal produced by Brownian motion, also known as "random walk". Observed by Scottish botanist Robert Brown in 1827, it refers to the random movement of suspended particles colliding with the moving particles of the fluid they are suspended in (Brown was examining under the microscope grains of pollen from ragged-robin flowers suspended in water). However—one should give credit where credit is due—these naturally occurring noisy phenomena had already been noted twenty-two centuries earlier by Lucretius. Indeed, in verses 113–140 from Book II of *De rerum natura*, Lucretius calls out attention

> to these motes which seem to confuse one another in the rays of the sun; because such disorders signify that there secretly exist tendencies to motion also in the principles of matter, though latent and unapparent to our senses. For you will see there, among those atoms is the sun-beam, many, struck with imperceptible forces, change their course, and turn back, being repelled sometimes this way, and sometimes that, everywhere, and in

all directions. And doubtless this errant-motion in all these atoms proceeds from the primary elements of matter; for the first primordial-atoms of things are moved of themselves; and then those bodies which are of light texture, and are, as it were, nearest to the nature of the primary elements, being urged by secret impulses of those elements, are put into motion, and these latter themselves, moreover, agitate others which are somewhat larger. Thus motion ascends from the first principles, and spreads forth by degrees, so as to be apparent to our senses, and so that those atoms are moved before us, which we can see in the light of the sun; though it is not clearly evident by what impulses they are thus moved.[85]

Science has identified Nature's noises, and has promptly proceeded to establish a taxonomy: there is *popping*, random occurring events of similar magnitude (popcorn being the obvious example), *snapping*, where the system violently changes state when it reaches a critical threshold (as in the sudden snapping of a piece of wood), and *crackling*, where there is a combination of the popping and snapping of small and large events (fire, crumpling paper, earthquakes).

And, finally, one must not forget the quintessential noise of Nature, what Malaspina describes as the archetypical noise of the 'unfolding universe': namely, the Cosmic Microwave Background, accidentally—randomly, noisily—discovered by physicists Arno Penzias and Robert Wilson in 1964. This remnant electromagnetic radiation, a relic from the early stages of the universe, faintly fills all space perpetually performing a somewhat noisy rendition of the Pythagorean Music of the Spheres.

Noise or music (reprise)

---

85 Lucretius, *On the Nature of Things*, trans. by John Selby Watson, (London: George Bell & Sons, 1880) p. 59.

Noise, however—as already alluded to above—still inhabits most comfortably what has been its original semantic territory ever since its linguistic birth (at least in the Romance lineage *bruit*, *ruido*, *rumore*): viz. the realm of *sound*.

Noise is vulgarly defined today as 'unwanted sound'—as it has been for some time now. The Scottish acoustician Alexander Wood,[86] writing in the early 1940s, is already pointing towards some interestingly speculative places—if undeveloped during those (pre "listening cultures", pre "acoustic ecology") times— that the thinking of noise might open up:

> [n]oise is a term which used to be applied very much in the sense of unmusical […]. It was reserved for sounds that were unpleasant, rough and lacking definite pitch. It has now [1944] been defined by international agreement as "sound which is undesired by the recipient". This is a distressingly subjective definition, but, after all, we are dealing with a subjective term. The sound of the siren is not a noise if it is blowing the "all clear", and a Bach Fugue on the piano next door, however faultlessly performed, *is* a noise if we are trying to settle ourselves to sleep.[87]

In an early environmental concern, Wood replays some resonances on the relationship between noise and ill health, at the same time foretelling Murray Schafer's sonic-environmentalist concerns of three decades later

> [t]he measurement of noise is the first step towards its control, and this step is now being taken. There is perhaps insufficient evidence available to enable us to assess accurately the effects of noise on the health of the people. Two facts, however, are already clear: (1) that noise is in some degree detrimental to health, (2) that much of the noise to which we are ordinarily exposed is unnecessary.[88]

---

86 Alexander Wood (1879-1950) was a student of Lord Kelvin at the University of Glasgow; a conscientious objector during World War I, he remained a militant pacifist throughout his life.

87 Alexander Wood, *The Physics of Music*, 6th ed. (Methuen, MA and London: University Paperbacks, 1962) p. 39.

88 Ibid.

Denouncing the invasion of the 'noise of technology' rubbing its way into urban and rural life, and blaming a newfound 'appetite for noise', stemming from the modern 'sensibility of man' (and pointing the finger to both the Futurists' erotico-fascistic obsession with the machine—to Russolo in particular—and to John Cage) Schafer will write in 1977 that '[t]oday, as the machines whirl in the hearts of our cities day and night, destroying, erecting, destroying, the significant battleground of the modern world has become the neighbourhood Blitzkrieg'.[89]

The perceived picture of noise in relation to sound and music has evolved and gone through various mutations, from the disruptions of the early twentieth-century avant-gardes up to the early twenty-first-century digital postconceptualisations. Most highly illustrative of this historical journey, Paul Hegarty's entry on "noise" in the *Grove Dictionary of Music and Musicians*—that *biblia sacra* of the Western musical establishment—is worth quoting *in extenso*:

> [t]raditionally, noise has been thought of as the outside of music and meaning. In systems theory, noise is disruption of the signal or message; in biological terms, it is associated with pain, in legal terms it is associated with disturbance. Noise is also that which has hitherto been excluded from being proper music, so can include radical new directions in musical form (Wagner, Coltrane) as well as noises deemed unmusical. The term noise implies a judgement about the type of sound, performance, or piece, not an inherent quality of it. This means that the idea of noise has always been historicized within music philosophy.

After mentioning the oft-quoted examples of Luigi Russolo and John Cage, Hegarty observes the mandatory invocation to Attali, who, in his view,

---

89 R. Murray Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World* (Rochester, VT: Destiny Books, 1994) p. 185. As Hainge notes, this book 'might be considered the ur-work of the anti-noise lobby' (*Noise Matters*, p. 41).

developed a Nietzschean argument wherein the history of music could be seen as the progressive domestication of noise, through familiarity, secularization of music, or legal controls (copyright, noise abatement, travel restrictions). More recently, Attali is often questioned, but it was his book, *Bruits*, that cleared the way for a contextualised understanding of noise and its relation to social and musical order, and established the idea that noise could work as a near-synonym for being avant-garde.

Hegarty then goes through his historicist account, wherein noise find itself incorporated into composition running through the names of Erik Satie, Charles Ives, Edgard Varèse, Pauline Oliveros, Pierre Schaeffer, Delia Derbyshire, and Stockhausen, without forgetting a mention to Jimi Hendrix's Woodstock rendition of *The Star-spangled Banner* in 1969. Other obligatory names thrown in together include representatives of the New York Downtown scene: Fluxus, Sonic Youth, Yoko Ono, through that of Masami Akita, aka Merzbow—arguably the preeminent example of the Japanoise scene —up to the recent digital explicitations of the "Harsh Noise Wall" movement. Confirming the relatively recent turn to genrefication, Hegarty concludes his entry stating that '[a]fter a brief period where noise was the essence of "noise music," the early-twenty-first century has seen a return to a paradigm (in performance and recording) of musicalization of noise'.[90]

However, the subtractive framework presented here—whereby noise originates in an ontological void—prescribes that noise can never ever be substantiated. From this perspective, then, there is no such thing as "noise music". In other words, noise can never be a genre[91] and, insofar as the former hails from the inevitable upsurge of a

90 Paul Hegarty, 'Noise', *Grove Music Online* (2016)
http://www.oxfordmusiconline.com/grovemusic/view/10.1093/gmo/9781561592630.001.0001/omo-9781561592630-e-1002292545 [accss. 2 May 2018].
91 As Brassier has eloquently argued, '[i]n this regard, the "noise" genre is undoubtedly a cultural commodity, albeit of a particularly rarefied sort. But so is its theorization'; see Ray Brassier, 'Genre is

(musical) void, there has always been some noise in every music.

A case in point which immediately problematises this (widespread) suturing of noise with twentieth-century modernisms is what has been termed within classical scholarship as the *New Music* of Athens. Evidence only recently researched[92] speaks of a wave of radically innovative experimental performers, composers and tragedians who emerged in mid-fifth century BC in Attica. The activities of this avant-garde (which counted Euripides amongst its supporters, as Aristophanes' brutal parodies attest to) appeared around the time of the democratic reforms of Pericles at the start of the 460s and lasted up to the beginning of the fourth century. Modern scholarship seems to unanimously agree that this Athenian *movida* of experimental music-theatre—which shows all the symptoms of a full-on Badiouian artistic event—was, indeed, an experimental avant-garde of noise-makers. Stephen Halliwell, for instance, writes about 'a trend of avant-garde musical experimentation' happening in Plato's own lifetime and 'often called the "New Music" by modern historians'.[93] Armand D'Angour echoes that '[i]n the case of ancient music, the terms "revolution" and "New Music" are regularly and unapologetically applied by modern scholars to developments in the late fifth century BC.'[94] The centre of the movement was Athens, but the wave also spread to other cities which happened to be under the influence of democratic ideology.[95] The members of this *camarilla*, 'ruffians' as Martin West jestingly calls them, were mainly 'composers of dithyrambs or *citharodes*'[96]—their names (in)famously exposed in a comedic fragment by Pherecrates (quoted in the Pseudo-Plutatchan *De Musica*):

Obsolete', *Noise and Capitalism*, ed. by Antony Iles et. al., (Donostia-San Sebastián: Arteleku Audiolab, 2009) pp. 61-71 (p. 69).

92 Mainly Pseudo-Plutarch (*De Musica* 29) and Aristophanes.

93 Stephen Halliwell, 'Plato', *The Routledge Companion to Philosophy and Music*, ed. by Theodore Gracyk & Andrew Kania (Abingdon: Routledge, 2011), pp. 307-316 (p. 307).

94 Armand D'Angour, 'The New Music—so what's new?', *Rethinking Revolutions Through Ancient Greece*, ed. by Simon Goldhill & Robin Osborne (Cambridge: Cambridge University Press, 2006) pp. 264-83 (p. 267).

95 See Csapo, 'The Politics of the New Music', p. 230.

96 Martin Litchfield West, *Ancient Greek Music* (Oxford: Oxford University Press, 1992), p. 357.

Melannipides, Phrynis, Cinesias, Philoxenus and Thimoteus, along with their tragedian accomplices such as Agathon and Euripides, and the histrionic showmanship of performers like the *aulete* Pronomus. Like every other avant-garde worthy of the name, it was properly provocative, scandalous and dangerous. According to Eric Csapo 'the critics cried "insurrection!" and "buggery' with a vehemence likely to dumbfound any who examines the actual remains of New Music.'[97]

One must insist, then, on this point: that with regards to its border with music, noise can be neither substantialised in a singular genre, nor ascribed to any particular historical sequence (as Hegarty and most sound studies scholars seem be inclined to do). As the fifth century BC musical revolution in Athens testifies, there have been eruptions of noise throughout the whole historical narrative of Western music.[98]

Noise happened (and happens) all the time: it retroactively becomes a musical event if and when encountered by musical subjects that, rather than denying or obscuring it, will have faithfully affirmed it as a new musical truth. Such affirmation (which amounts to an explicit articulation, by the musical subject, of the noise itself) is precisely what *a musical education in noise* supports (which amounts to an explicit *dialogic response* to the noise articulated by the subject).

4.3. The Matheme of Noise

The Shannon event and Malaspina's enquiries

The field of Information Theory will deserve some closer attention, if only for the

97 Csapo, 'The Politics of the New Music', p. 207. For further reading on this fascinating subject, see also Isobel Henderson, 'Ancient and Oriental Music', *Ancient Greek Music*, ed. by Egon Wellesz (Oxford: Oxford University Press, 1957), pp. 336–403.
98 Whether it has been something happening *exclusively* within Western music history, is another matter.

reason that it has a strong case to being the framework wherein noise gets its most formal, mathematised treatment, and therefore—a Badiouian reader might think—it should provide fertile grounds for sowing a proper ontology of noise.[99]

Information theory, the science studying the transmission, encoding, decoding, processing, extraction, and utilisation of communication, sprang towards the end of the 1940's as a result of the work done by mathematician and electronic engineer Claude Shannon.[100] Its founding moment was the publication of two papers in 1948 in the July and October issues of the *Bell Systems Technical Journal*, titled 'A Mathematical Theory of Communication'.[101]

Shannon's intervention has arguably acquired the intensity of an event, in the proper Badiouian sense of the term—something which Malaspina makes very clear right at the start of her seminal treatise: '[t]he conceptualization of noise takes a new turn in relation to Claude Shannon's definition of information as "information entropy"—this much is certain.'[102] And, in this respect, Malaspina is not alone—indeed, the evental aspect of Shannon's invention is something universally acknowledged in the scientific community, as neuroscientist James Stone remarks:

> Shannon's theory underpins our understanding of how signals and noise are related, and why there are definite limits to the rate at which information can be communicated within any system, whether man-made or biological. It represents one of the few

---

99 Not to mention the fact that Attali's own conception of noise will have drawn most of its vocabulary—though, as we shall see, not all of the potential consequences—from it.

100 Claude Elwood Shannon (April 30, 1916 Petoskey, MI – February 24, 2001, Metford MA,) was also co-inventor of Pulse-code Modulation (PCM), a method for digitally representing analog signals: PCM is the technique used to encode audio data to be stored in CDs.

101 See Claude E. Shannon, 'The Mathematical Theory of Communication', *The Mathematical Theory Of Communication*, by Claude E. Shannon & Warren Weaver (Urbana, IL: The University Of Illinois Press, 1964), pp. 29-125.

102 EN p. 17

examples of a single theory creating an entirely new field of research. In this regard, Shannon's theory ranks alongside those of Darwin–Wallace, Newton, and Einstein.[103]

Shannon's formalisation presents something like an *informational situation* which, as already mentioned, is *ontologised*, in a quasi-Badiouian manner. And qua situation, it finds itself here subtracted from any predicates and particularities—hence the irrelevance of semantic signifiers. As Warren Weaver explains in the introduction to the book-edition of Shannon's paper, '*information* must not be confused with meaning. […] It is this, undoubtedly, that Shannon means when he says that "the semantic aspects of communication are irrelevant to the engineering aspects"'.[104]

It is this 'ontologisation' of the informational situation that which marks the Shannon singularity as an event. And it is arguably Malaspina's work which—in true Badiouian spirit, one must say—best extracts the full philosophical consequences from said event:[105]

> Shannon's conceptual audacity was to treat information as a raw fact, in all its ontological and epistemological nudity. Devoid of Boltzmann's reference to physical reality, but also of Wiener's utilitarian injunctions regarding organization or purpose, Shannon's "entropic ideas" help us to rethink information as a pure event of which we know nothing but the improbability of its occurrence. What information philosopher

103 James V Stone, *Information Theory: A Tutorial Introduction* (s.l.: Sebtel Press, 2015), p.2. Soon after the publication of the papers, in 1953, Francis Bello blazoned in the pages of *Fortune* magazine in that '[g]reat scientific theories, like great symphonies and great novels, are among man's proudest—and rarest creations. What sets the scientific theory apart from, and, in a sense above, the other creations is that it may profoundly and rapidly after man's view of the world [...] Within the last five years a new theory has appeared that seems to bear some of the same hallmarks of greatness.' Francis Bello, 'The Information Theory', *Fortune* 48:6, pp. 136-58; quoted in Jeremy Campbell, *Grammatical Man: Information, Entropy, Language, and Life* (New York: Simon and Schuster, 1982), p. 19.
104 Warren Weaver, 'Recent Contributions to the Mathematical Theory of Communication', *The Mathematical Theory Of Communication*, by Claude E. Shannon & Warren Weaver (Urbana, IL: The University Of Illinois Press, 1964), pp. 1-28 (p. 8)
105 Malaspina would probably correct my use of the term *philosophical* to *epistemological*.

Luciano Floridi has called the most profound epistemic upheaval since the invention of the Gutenberg Press, must therefore be considered not only in light of the profound impact of new communication technologies […] but also in light of its truly philosophical audacity.[106]

In Shannon's inaugural papers, we find a first attempt to mathematically capture and formalise those elusive concepts and definitions that we have been relating to noise in order to somehow *measure* its protean nature.[107] In Shannon's framework though, Proteus-noise takes the form of (what some would regard as) its opposite: viz., *information*.

Before Shannon's paper, information had been viewed as a kind of poorly defined miasmic fluid. But after Shannon's paper, it became apparent that information is a well-defined and, above all, measurable quantity. Shannon's paper describes a subtle theory which tells us something fundamental about the way the universe works.[108]

Shannon's translation

Shannon's tremendous achievement is nothing else than an elegant and rigorous piece of *conceptual translation*[109] of an earlier body of work: viz., Ludwig Boltzmann's statistical formalisation of molecular entropy. During the last quarter of the nineteenth century, Boltzmann's work on kinetic theory of gases, together with that of Josiah Willard Gibbs and James Clerk Maxwell—building upon the earlier findings of Rudolf Clausius, which had laid the foundations for establishing the second law of thermodynamics—

---

106 EN p. 105.
107 'Essentially', Jeremy Campbell writes, 'the papers consisted of a set of theorems dealing with the problem of sending messages from one place to another quickly, economically and efficiently' (*Grammatical Man*, p. 17).
108 Stone, *Information Theory*, p. 2.
109 I mean *translation* with the full Serresian inflection that I am using throughout this essay, viz., as a producer of noise and, hence, of potentially new sense.

eventually led to the creation of the field known as statistical mechanics, a scientific event marking the epistemological rupture that shifted physics from dynamical to thermodynamical paradigms.[110]

As suggested above, Shannon's invention consisted in a translation of Boltzmann's et al. statistical mechanical concepts and formulae into informational terms: in short, it comprised a perfect example of an *epistemological trespass*. As Malaspina notes, 'Ludwig Boltzmann's great innovation during the nineteenth century was to devise the statistical formulation of molecular entropy, which became the basis for Shannon's formalized concepts of both information and noise.'[111] And it is precisely because of this translation, or, rather, because of the nature of the borders crossed, that a particular kind of epistemological noise is here produced: one that jitters the respective meanings of information and noise themselves. In Malaspina's reading, this semantic jittering happens because 'despite the high degree of formalization, the intuitive idea of disorder continues to colour our idea of entropy and, consequently, both Shannon's concepts of information and noise.'[112]

And, at the centre of Shannon's translation, is the notion of entropy, as Malaspina plainly points out: '[t]he conceptual operator upon which the idea of information uncertainty hinges, is entropy'.[113]

Entropy as a condition for thought

---

110 And an evental break which, as Serres notes, was a fundamental condition in Freud's development of his idea of the unconscious. 'Freud, however, aligns himself with these [thermodynamic] findings: he manifestly adopts as an initial model a topology like that of Maxwell and Listing, in which lines of force are already called complexes, and an energy theory based on thermodynamics and linked to two fundamental principles: the conservation of energy and the tendency toward death. Freudian time is irreversible (*Hermes*, p. 72).

111 EN p. 4.

112 Ibid.

113 EN p. 27.

Entropy is the *hermetic signifier* par excellence. First coined by Clausius in 1885, when trying to define a quantity which could measure the 'equivalence of transformations', he proposed, 'to call this quantity, after the Greek word τροπή, Transformation, the Entropy of the body'.[114]

As Arthur Eddington explains, entropy is no more (no less) than 'a criterion to distinguish past and future time', which means then that it is an idea inseparable from a notion of *temporality*.[115] Eddington—who was first to coin the 'time's arrow' metaphor—ties entropy, not only to a notion of irreversible temporality, but, fascinatingly enough, to that of *consciousness*.[116] What is more, insofar as it is 'the practical measure of the random element which can increase in the universe but can never decrease',[117] entropy is a notion which, in turn, links temporality with *randomness*.

What we have then is entropy (noise), temporality, chance and consciousness (subjectivity)—this is not, however, the full picture. It has been established that the transition from low to high entropy (as established by the second law), can also be productive of emergent complexities—in other words, the passage from order to disorder may be, through its own imbalance and nonequilibrium, productive of *new* order. This position is doggedly maintained by Ilya Prigogine and Isabelle Stengers, for example. Specifically, for Prigogine irreversibility is not the mere introduction of increasing ignorance into the laws of physics, as is commonly asserted. In other words, entropy is *not only* the result of approximations forced onto physicists by the second law.

---

114 Rudolf Clausius, *The Mechanical Theory Of Heat*, trans. by Walter L. Browne (London: Macmillan, 1879), p. 107. Earlier, in a paper published in 1865, Clausius had written that '[t]he word entropy is deliberately formed as similar as possible to the word energy, for the two magnitudes which are to be named by these words are so closely related to one another in their physical meanings, that a certain similarity in their designation seems to me to be convenient. Rudolf Clausius, 'Ueber verschiedene für die Anwendung bequeme Formen der Hauptgleichungen der mechanischen Wärmetheorie (Vorgetragen in der naturforsch. Gesellschaft zu Zürich den 24 April 1865)', *Annalen der Physik und Chemie.* 125:7, pp. 353–400 (p. 390).
115 Arthur S. Eddington, *The Nature Of The Physical World* (New York: Macmillan, 1929), p. 72.
116 Ibid. pp. 68-75.
117 Ibid. p. 74.

The main reason to discard the banalization of irreversibility is that we can no longer associate the arrow of time only with an increase in disorder. Recent developments in nonequilibrium physics and chemistry point in the opposite direction. They show unambiguously that the arrow of time is a source of *order*.[118]

It is here, then, that the core of my arguments resides: the temporalisation of the void as noise, the connection between the randomness of the truth-procedure with a subjective production of time in the assembling of a new truth, all of which is buttressed by what I call an education *in* noise: all of these concepts happen to be hermetically braided in and through entropy.

And, after all, if Eddington's word is anything to go by, the immanent uncertainty, irreversibility and potential that entropy brings with it, is precisely what provides any thought conditioned by it with a sound foundation.

The law that entropy always increases—the second law of thermodynamics—holds, I think, the supreme position among the laws of Nature […] if your theory is found to be against the second law of thermodynamics I can give you no hope; there is nothing for it but to collapse in deepest humiliation.[119]

Nonetheless—and this point is crucial—entropy has to be considered as both an index of disorder *and* a bearer of new order. To put it in Žižekian Hegelese: entropy is split, immanently carrying its own negation. This dialectic—which, one might note in passing, does not contradict the second law—is precisely what I signify by the notation *(neg)entropy*.

118 Prigogine, *The End of Certainty*, p. 26.

119 Ibid.

Information entropy

Technically speaking, entropy refers to the amount of disorder (or randomness) in a thermodynamic system (in the case of statistical thermodynamics, the systems show a relatively large amount of freedom: say, the movement of air molecules in a container). When Shannon performs his translation, '[t]he resulting formalism,' Malaspina observes, 'is not just metaphorically, but formally analogous with the statistical expression of physical entropy.'[120]

In information theory, entropy is related to the *lack of information* about the state of the system (or, correspondingly, how much information we need to add in order to know the exact state of the system). Very simply put: the occurrence of a low-probability (i.e. more uncertain) event carries *more information* than a higher probability (i.e. less uncertain) event. The average amount of information carried by each of these events, expressed as the value of a random variable (i.e. when considering all possible outcomes), is equal to the amount of information entropy.

But how does Shannon connect entropy and information? Through the notion of surprise. Take as an example the toss of an unfair coin: say that we already know that there is a 90% probability of landing heads. In which case, we would be more surprised if the (less probable) outcome of tails lands. Shannon will have measured the amount of surprise as the inverse of the probability of an outcome (or, more specifically, as the logarithm of the inverse of the probability). Shannon's entropy would be, not necessarily the measure of surprise of a single outcome, but the *average surprise* throughout *an entire set of outcomes*. Shannon's entropy is therefore the average surprise of the probability distribution of the random variable defined by those possible outcomes.

120 EN p. 27.

Uncertainty, freedom of choice

But how does noise relate to information and entropy? Shannon begins his seminal paper by reflecting on an immanent uncertainty ingrained in any communication:

> [t]he fundamental problem of communication is that of reproducing at one point either exactly or approximately a message selected at another point. Frequently the messages have *meaning*; that is they refer to or are correlated according to some system with certain physical or conceptual entities. These semantic aspects of communication are irrelevant to the engineering problem. The significant aspect is that the actual message is one *selected from a set* of possible messages. The system must be designed to operate for each possible selection, not just the one which will actually be chosen since this is unknown at the time of design.[121]

As Malaspina notes, 'Shannon's audacity consists quite simply in correlating both information and noise with uncertainty',[122] or, to put it schematically:

$$\text{information} \longleftarrow[\text{uncertainty}]\longrightarrow \text{noise}$$

And adding her own Hegelian twist, Malaspina later on remarks that 'we can now think of information as a subtler difference than that between organization and chaos or sense and non-sense, *a difference that takes place within the conceptual space of entropy, within the space of uncertainty*'[123] (a remark somewhat suggestive of the (neg)entropic split alluded to above).

---

121 Shannon, 'The Mathematical Theory of Communication', p. 31.
122 EN p. 15.
123 EN p. 50 (my emphasis).

It is important to note that noise is here not (yet) related to semantic sense, viz., as lack of meaning, or none-sense. In fact the notion of *meaning* per se makes no sense within the informational situation:

> [t]he concept of information applies not to the individual messages (as the concept of meaning would), but rather to the situation as a whole, the unit information indicating that in this situation one has an amount of freedom of choice, in selecting a message, which it is convenient-to regard as a standard or unit amount.[124]

This line of argumentation rings with some intriguing resonances, inasmuch as information as defined here—even within this extremely formalised mathematical formulation—seems to be tinkling with subjective overtones, in that it appears to point towards some (probabilistic) notion of *freedom of choice*:

> [t]o be sure, this word *information* in communication theory relates not so much to what you *do* say, as to what you *could* say. […] That is, information is a measure of one's freedom of choice when one selects a message. If one is confronted with a very elementary situation where he has to choose one of two alternative messages, then it is arbitrarily said that the information, associated with this situation, is unity.[125]

This is a crucial aspect, as Malaspina is quick to notice: if entropy is a measure of the uncertainty of all possible outcomes, in other words, 'if all probabilities […] are equal then the greatest possible "freedom of choice" corresponds to the greatest possible uncertainty regarding the actual state of either system or message, with respect to all its possible states.'[126]

---

124 Weaver, 'Recent Contributions', p. 14.
125 Ibid, p 8-9.
126 EN p. 27-8

It is here then, that for Malaspina, '[e]ntropy and noise indeed become identifiable.'[127] However—and most crucially—this does *not* imply the identification of noise with a statistically predictable quantity (more akin to a modern notion of chaos):

> it would be wrong to overstate the statistical determination of noise and call it predictable, because ultimately entropy and noise remain a measure of 'freedom of choice', characteristic of an undetermined state of the system or message.[128]

And it is precisely here, as well, that we find a key (philosophical) difference between chaos and noise: insofar as the latter involves the notion of *freedom of choice*, it allows—unlike the former—for some idea of *subjectivity* to emerge. And this idea hinges on the distinction between statistics and probability.

> The quantity of information in Shannon's sense is analogous to the probability with which the observer of a physical system can predict what Max Planck called the micro-complexions of a given system, and the probabilities of finding the system in any of these complexions.[129]

In the end, as Díaz Nafría observes, it all resides on the issue of *deciding*, or *doing*—in other words, what is there to do when encountering information and noise? (How does one decide it is one or the other?).

> The very concept of "information" puts forward deep and challenging questions. Just one binary digit may tell us if the universe is about to collapse, thus being very

---

127 EN p. 28.

128 EN p. 28

129 Ibid. As for the concept of micro-state, and its relation to disorder and equilibrium, as Henri Atlan explains, '[m]aximal disorder obtains when the system reaches its state of equilibrium. In fact, such disorder is mere statistical homogeneity and concerns the placement of the submicroscopic particles (molecules, atoms, elementary particles) which constitute matter, in every one of its possible energetic states (its "microstatess")'; see Henri Atlan, *Entre le cristal et la fumée: Essai sur l'organisation du vivant* (Paris: Éditions du Seuil, 1979) p 28.

informative, and all millions of terabits on the web (measured in a Shannon's sense) may also be generated by the whim of electrons in a rheostat, therefore being uninformative.[130]

The conclusion being, as Malaspina puts it, that 'nothing distinguishes outwardly "information entropy" from what we would ordinarily call noise.'[131]

Noise as spurious information

Shannon's system, however, should be seen as a formal tool built, not to extract the subjective (philosophical, political) consequences of this uncertainty, but, much to the contrary, to aid in the *resolution of such uncertainty* (in other words, to lower the probability of decoding error). In order to achieve this, the system needs, first of all, to identify the appearance of noise–or rather, to index its locus—within the informational loop: Shannon accordingly begins by formalising a communicative mechanism comprised of five essential parts:

> 1. An *information source* which produces a message or sequence of messages to be communicated to the receiving terminal […]. 2. A *transmitter* which operates on the message in some way to produce a signal suitable for transmission over the channel […]. 3. The *channel* is merely the medium used to transmit the signal from transmitter to receiver. 4. The *receiver* ordinarily performs the inverse operation of that done by the transmitter, reconstructing the message from the signal. 5. The *destination* is the person (or thing) for whom the message is intended.[132]

As is apparent then, the *message* is the actual *connecting stuff* linking the source with

---

130 Díaz Nafría, 'What is Information?' p. 77.
131 EN p. 24.
132 Shannon, 'The Mathematical Theory of Communication' p. 2.

the receiver and flowing through the info-communicative machine: one could think of it as the *material* of information, its unit of measurement being the bit.[133] As for the *signal*, this is defined as a *function* of which its variation in time, space, temperature, or any other independent variable able to convey information, *represents* the information conveyed by such variables.[134] A signal is, more generally then, the representation of a disturbance, of a transfer of energy, of an oscillation, or a vibration.[135]

It is within this, or rather, *because of* this *source-transmitter-message-channel-signal-receiver-destination* assemblage, then, that noise makes its appearance:
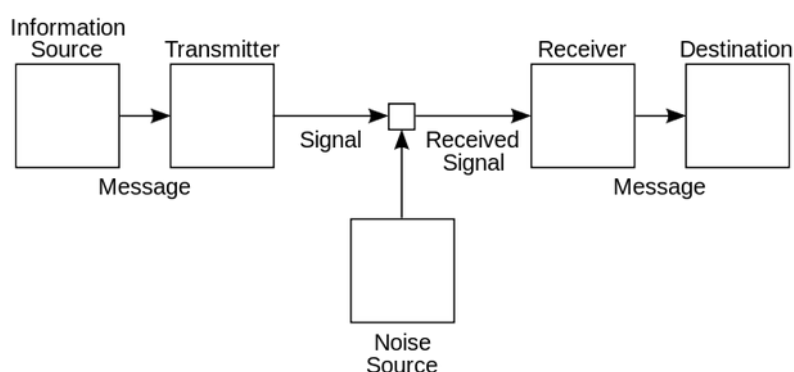
As Weaver explains:

in the process of being transmitted, it is unfortunately characteristic that certain things are added to the signal which were not intended by the information source. These

133 Shannon writes that a message, could be 'a sequence of letters (as in the telegraph), or 'a single function of time' (as in radio or telephony), 'a function of time and other variables' (black-and-white television), 'two or more functions of time' (three-dimensional sound), 'several functions of several variables' (color television), and 'various combinations' of the above (Ibid, p.2).

134 'A signal is a function that conveys information about the behaviour of a system or attributes of some phenomenon'. Roland Priemer, *Introductory Signal Processing* (Singapore, New Jersey and London: World Scientific, 1991) p. 1. For Shannon (writing in the late 1940s) the signal in telephony, for example, would consist of 'changing sound pressure', in telegraphy 'a sequence of dots, dashes and spaces' and so on (Ibid. p. 2)

135 'In most cases, these signals originate as sensory data from the real world: seismic vibrations, visual images, sound waves, etc.' Steven W. Smith, *The Scientist and Engineer's Guide to Digital Signal Processing* (San Diego, CA: California Technical Publishing, 1999) p. 1.

unwanted additions may be distortions of sound (in telephony, for example) or static (in radio), or distortions in shape or shading of picture (television), or errors in transmission (telegraphy or facsimile), etc. All of these changes in the transmitted signal are called *noise*.[136]

Furthermore, Weaver goes on to equate noise with the 'spurious portion' of information:

It is generally true that when there is noise, the received signal exhibits greater information- or better, the received signal is selected out of a more varied set than is the transmitted signal. This is a situation which beautifully illustrates the semantic trap into which one can fall if he does not remember that "information" is used here with a special meaning that measures freedom of choice and hence uncertainty as to what choice has been made. It is therefore possible for the word information to have either good or bad connotations. Uncertainty which arises by virtue of freedom of choice on the part of the sender is desirable uncertainty. Uncertainty which arises because of errors or because of the influence of noise is undesirable uncertainty.

It is thus clear where the joker is in saying that the received signal has more information. Some of this information is spurious and undesirable and has been introduced via the noise. To get the useful information in the received signal we must subtract out this spurious portion.[137]

Shannon's concern is 'in particular the effect of noise in the channel, and the savings possible due to the statistical structure of the original message and due to the nature of the final destination of the information'.[138]

---

136 Weaver, 'Recent Contributions', p. 7-8.
137 Ibid. p. 19.
138 Shannon, ' The Mathematical Theory of Communication' p. 1.

All in all Shannon's efforts are an expression of *technology's desire* (which, one could add, is itself an expression of the *state's desire* as a whole) to neuter noise, to ceaseless focus on the Sisyphean effort of infinitely increasing the signal-to-noise ratio, not only in every communicative situation, but in *every possible situation*.

Noise vis-à-vis signal

Such desire finds a most formal expression in Shannon's *noisy-channel coding theorem*, which states the following: given a noisy channel with channel capacity C and information transmitted at rate R, then if R < C, there exist codes that allow the probability of error (of noise) at the receiver to be made arbitrarily small. This means that, theoretically, it is possible to transmit information nearly without error at any rate below a limiting rate, C (in the converse situation, wherein R > C, an arbitrarily small probability of error is not achievable). This theorem became a foundation pillar for *Coding theory*—yet another subset of communication theory—a field which groups together the technologies developed to exploit channel capacity, and allow for work within bounds of the immanent signal-to-noise limits of a system.

Shannon's system then, considers mostly 'the entropy of the message relative to the signal'[139]: the consequences of this, as Malaspina observes, are not trivial, insofar as 'what remains in the dark, if we consider only the problem of noise in the channel of communication, is thus the part that the accidental may play in the decision to select and designate something, in principle *anything*, as information'.[140]

---

139 Weaver, 'Recent Contributions', p. 19-20.
140 EN p. 98.

Weaver's conclusive remarks on this issue, even though not abandoning a clearly scientistic and positivist viewpoint, are worth quoting i*n extenso*:

> [o]ne can imagine, as an addition to the diagram, another box labeled "Semantic Receiver" interposed between the engineering receiver (which changes signals to messages) and the destination. This semantic receiver subjects the message to a second decoding, the demand on this one being that it must match the statistical *semantic* characteristics of the message to the statistical semantic capacities of the totality of receivers, or of that subset of receivers which constitute the audience one wishes to affect.
>
> Similarly one can imagine another box in the diagram which, inserted between the information source and the transmitter, would be labeled "*semantic noise*," the box previously labeled as simply "noise" now being labeled "engineering noise." From this source is imposed into the signal the perturbations or distortions of meaning which are not intended by the source but which inescapably affect the destination. And the problem of semantic decoding must take this semantic noise into account. It is also possible to think of an adjustment of original message so that the sum of message meaning plus semantic noise is equal to the desired total message meaning at the destination.[141]

Weaver's 'semantic noise' seems to hint at the other crucial concept at work in my thesis: that of *the incompleteness of language*, residing at the origin of what I am terming noise-inside.

Bit as relation

Shannon's paper, incidentally, presents the first ever appearance of the word 'bit'.[142] In

---

141 Weaver, 'Recent Contributions', p. 26.
142 Even though Shannon (who was renowned for his humbleness) credits it as 'a word suggested by [the

one of her many insights, Malaspina identifies that in a "bit", 'what is thereby quantified

is not a signal or message, but *a changing relation* between the actual and the possible,

within a given frame of constraints'.[143]   Insofar as the notion of relation will become

fundamental to my conclusive argument, this beautiful idea has immense anticipatory

potency for my educational argument.

Furthermore, what Malaspina seems to be not unnoticing here, is the fact that a

bit, in Shannon's sense (viz., as a measurement of the amount of information in a

message) is not identical to a *binary digit* (viz., as the outcome [0,1] of a binary variable)—

a common confusion which, as Stone points out, is the source of a serious category

error:

> [d]espite the fact that the word *bit* is derived from *binary digit*, there is a subtle, but vital,
>
> difference between them. A *binary digit* is the value of a binary variable, where this value
>
> can be either a 0 or a 1, but a binary digit is not information *per se*. In contrast, a bit is a
>
> definite amount of information. Bits and binary digits are different types of entity, and to
>
> confuse one with the other is known as a *category error*.[144]

As Malaspina correctly hints, this distinction points to notions concerning

freedom of choice and subjectivity. The difference between receiving a message carrying

new information, or one that simply confirms something already known. To illustrate

this: take a subject faced with an option to turn left/right in a junction; each choice can

be represented by a binary digit, say: right = 0, left = 1; if the subject already knows that

they will have to turn left, the binary digit 1 will have provided them with zero bits of

information. Moreover, if they know that there is, say, 70% chance that they will turn left, then the binary digit 1 will have provided them with *less* than 1 bit of information—in fact, it is providing the subject *half a bit* of information.

When thought in the context of a subjective truth-procedure within Badiou's framework, wherein the subject enquiries are defined by binary options of the form "*is this element (x) positively connected to the event?*", Shannon's informational tools might help opening up novel ways of formalising the random trajectory drawn by a truth procedure.

Considering that such trajectory concerns, as I claim here, the domain of education, the consequences of these new formalisations might not be unimportant.

4.4. The Nil-dimensionality of Noise

Order, disorder: information, noise

Once again, the paradox identified by Malaspina is that 'nothing distinguishes outwardly "information entropy" from what we would ordinarily call noise'.[145] Precisely this same paradox emerges with the notions of order and disorder—in order to illustrate this semantic puzzle, one has but to recall Gregory Bateson's 'Metalogue' with his daughter:

Daughter: Daddy, do you and I mean the same thing by "tidy?"

Father: I doubt it, my dear—I doubt it.

---

145 EN p. 24.

Daughter: But, Daddy, isn't that a funny thing—that everybody means the same thing when they say "muddled" but everybody means something different by "tidy". But "tidy" *is* the opposite of "muddled," isn't it?[146]

Commenting on this delightful passage, Henri Atlan observes that what is at stake here is a matter of signification at the level of the receiver. Bateson's daughter's questions illustrate a not unfamiliar situation: the encounter with someone else's working space (desk, filing cabinets, shelves etc.), all of which appear to the outsider as a 'muddle' of papers, books and unidentifiable stationary—an uncodifiable mess of stuff to everyone's but the proprietor's eyes. Why would the task of trying to impose a new order on this disorder would be almost futile? Because, as Atlan explains,

[w]hat we are dealing here is documents in terms of their relation to their user. The apparent disorder was hiding an order determined by a specific knowledge of each one of the documents and their possible utilitarian signification. But why did this order have the appearance of disorder? Because for the second observer, who desires to "put some order", the documents no longer have the same signification. […] What we see here is that the opposition between order and apparent order proceeds from the fact that the documents be considered either in their individual and specific signification, or globally with an altogether different individual signification (determined, for example, on shape, colour, or any other ordering principle decided from the outside and without the knowledge of the user), or even with no signification at all.[147]

And it is indeed this same paradox that Malaspina identifies in 'Shannon's definition of

146 Gregory Bateson, 'Metalogue: Why Do Things Get in a Muddle?', *Steps to an Ecology of Mind* (Chicago & London: The University of Chicago Press, 1972) pp. 3-8 (p. 4).
147 Atlan, *Entre le cristal et la fumée*, p 27.

information' and which therefore 'appears dangerously close to that of noise.'[148]   So, once again, we have here the case of noise's *self-dithering* behaviour, which could be formalised ontologically as a (banned) self-belonging set—and which is, let us not forget, the formalisation of a Badiouian event itself. Indeed, for Malaspina, this self-reflexivity between Shannon's information and noise

> is paradoxical in the sense that it is free of cultural pre-conceptions and therefore offends such pre-conceptions, transgressing their *doxa*: in this sense the conceptual innovation inherent in Shannon's concept of "information entropy" indeed acts as a form of conceptual noise, when it is exported from its technological application to other domains.[149]

Shannon's definition of entropic noise is a concept that itself emits 'conceptual noise', and this without it being necessarily *self-contradicting;* it is in this sense that Shannon's entropy—as definition *and* as subject of a definition—is purely 'evental' in Badiou's sense of the term.

Indeed, as Malaspina argues, Shannon's entropy does contradict 'the *doxa* according to which one ought to obtain from information *simultaneously* both novelty and a reduction in uncertainty', frustrating the 'paradoxical need' to equate novelty and certainty, thereby enabling us 'to think about contingency as belonging to the conditions of possibility of all processes of information, including but not only of those processes we associate with signification in the semantic communication between sapient beings.'[150]

---

148 EN p. 23
149 EN p. 24
150 EN p. 24

In this respect, one could not agree more with Malaspina's imperative of exploring the site demarcated by the relationship between noise, information, knowledge, subjectivity and truth. The fact that Malaspina utilises slightly different conceptual tools and philosophical vehicles to survey it, is a mere contingency, and the only the reason why some of our respective 'discursive interpretations' (which are sensitive to initial conditions), will have inevitably drifted apart, even when strong common attractors remain.

Return to ontology?

The void as noise provides a vehicle out of the realm of ontology. Insofar as this is done by temporalising the void, this movement brings with it (neg)entropy and irreversibility: it would seem, then, that once out of ontology, there is no going back.

Having said that, would it be possible to think of noise in purely ontological terms? Can we think of noise *de-sutured from the physico-phenomenological condition*? This is precisely what Shannon's intervention is designed to do.

Information theory allows for the thinking of noise *unburdened by its physical body.* This is almost graphically evinced in the way that Shannon tweaks Boltzmann's formulae for statistical mechanics, which measures the entropy of a physical system, in order to obtain his own formula for information entropy:

Boltzmann:

$S = -K \sum p_i \log p_i$: physical system—number of possible states as a *physical entity*

(p_i is the probability of the momentum and position of particles at any given moment)

Shannon:

$$H = -\sum p_i \log p_i$$: information—number of possible states as a *message*

(p_i is the probability—(0,1) of signs)

As we can see comparing the formulae, Shannon's information entropy (H) is almost identical to Boltzmann's statistical entropy (S): the former only lacks the latter's constant K. As Malaspina notes,

> Shannon uses a mathematical expression that is almost identical to Boltzmann's. What is significant, however, is that he leaves out the term K. K is the physical constant that expresses the calorific value of flows of energy, understood as displacements of thermal charges, wherever a disparity exists between energy levels, for instance in electrical currents or in flows of matter. This algorithm, K, is what anchors Boltzmann's formula in physical reality.[151]

Now, as alluded to above, it is the use of the notion of entropy what makes Shannon's configuration *metaphorical*: it is what renders it a proper noise-producing translation—indeed, as Malaspina puts it, entropy is 'an indispensable metaphor into this ontologically arbitrary concept of information'.[152] However, for Malaspina, this metaphorical aspect is operated by omitting the Boltzmann constant. The omission of this term—which, one might say, is the mark of a suture to *physis*–is what unmoors Shannon's concepts from the weight of an empirical body, and therefore, 'by leaving out the reference to this physical aspect',

> Shannon transforms Boltzmann's mathematical expression of entropy into an

---

151 EN p. 29.
152 EN p. 27

ontologically arbitrary measure of probability. Shannon thereby unmoors probability from Boltzmann's empirical measure of calorific conversion of energy and work related to thermal displacements in a physical system'.[153]

So, for Malaspina, even though it is still true that Shannon does apply his concept to empirical realms such as electronic signal transmission and the like,

his concept of "information entropy" and hence also of noise is now devoid of any ontological reference: it could inform us about the probability of occurrence of any phenomenon involving large numbers, be it the flow of signals, flows of people, of goods or unicorns – in short it is ontologically arbitrary.[154]

Or, in Badiou's terms, *ontological*, tout court. Noise hence becomes the abstract interior of a black box, a negativity of absolute lightness, complying with what Bateson calls 'the negative character of cybernetic explanation', wherein '"information" is quantified in negative terms.'

An event or object such as the letter K in a given position in the text of a message might have been any other of the limited set of twenty-six letters in the English language. The actual letter excludes (i.e., eliminates by restraint) twenty-five alternatives. In comparison with an English letter, a Chinese ideograph would have excluded several thousand alternatives. We say, therefore, that the Chinese ideograph carries more information than the letter. The quantity of information is conventionally expressed as the log to base 2 of the improbability of the actual event or object.[…] Probability, being a ratio between quantities which have similar dimensions, is itself of zero dimensions. That is, the central explanatory quantity, information, is of zero

153 EN p. 31.
154 Ibid.

dimensions. Quantities of real dimensions (mass, length, time) and their derivatives (force, energy, etc.) have no place in cybernetic explanation.[155]

Once accepted, the nil-dimensionality of noise is what guarantees its *passepartout* capability, its *pan-filtering* through any border, membrane and category one can think of: *inside|outside, objective|subjective, afferent|efferent*,[156] *I|it, immanent|transcendent, emic|etic, voice| language, logos|melos, microstate |macrostate*,[157] and so on.

As such, the void-as-noise becomes thermodynamical, irreversible, relational, *Hermetic*.[158]

However—and this is crucial—as far as a subject is concerned, there will always be some *work* to be done: granted, Shannon's information, and noise itself, might have been unmoored from *physis* and hence able to inhabit an ontology of sorts: the *work* of the subject, however, will have been always already temporalised, entropic, *heat-producing*. 'Information has a definite lowest cost which can be measured in joules per bit. More than any other, this fact establishes the existence of a fundamental link between Shannon's information entropy and Boltzmann-Gibbs' thermodynamic entropy.'[159] Such a link indexes the physical channel wherein education passes, the chord wherein the void transduces into noise.

155 Gregory Bateson, 'Cybernetic Explanation', *Steps to an Ecology of Mind* (Chicago & London: The University of Chicago Press, 1972) pp. 405-16 (pp. 408-09).
156 See Malaspina, EN p. 98.
157 Viz., *kinetic energy of molecules|temperature of a system*, which marks the boundary between *classical thermodynamics|statistical mechanics*.
158 One of the most common of the many epithets of Hermes is στροφεύς (*stropheus*): as Karl Kerenyi comments, στροφεύς is the "socket" in which the pivot of the door moves, showing Hermes 'closely related to door hinges, and therefore to the entrance but also to a middle point, to the socket, about which revolves the most decisive issue, namely the alternation life-death-life'. Karl Kerényi, *Hermes: Guide of Souls*, (Putnam, CT: Spring Publications, 1976), p. 103.
159 Stone, *Information Theory* p. 184.

The subject will always already remain a noisy, *embodied* void. And therefore, there is indeed, always already, *a minimum pysico-phenomenological fee* to pay for the cost of educating this body: precisely 9.57×10^{-24} joules/degree per bit of acquired information, as established by the Landauer limit.

Entropy, negentropy & (neg)entropy

Considering that I have been deploying the term *negentropy* somewhat liberally throughout this thesis, the concept might now require more careful examination. And in particular, a closer look will be given to that which I have been notating as *(neg)entropy*, 'the mutual entanglement and correspondence between the two concepts of entropy and negative entropy,' as Kun Wu et al. put it.[160]

Now, in Wu's analysis, Shannon's information entropy formula $H = -\sum p_i \log p_i$ can be interpreted 'in multiple senses', insofar as it can be a measure of any of the following:

i. the randomness of the message sent by the source,

ii. the a priori uncertainty of the message generated by the source

iii. the ability of a source to send information

iv. the uncertainty of choosing among multiple messages

v. the average information quantity (average eliminated uncertainty) carried by each message

vi. the average degree to which information sink uncertainty is changed.

---

160 Kun Wu, Qiong Nan & Tianqi Wu, 'Philosophical Analysis of the Meaning and Nature of Entropy and Negative Entropy Theories', *Complexity* 8769060 (2020), doi.org/10.1155/2020/8769060, p 2.

All of which carries the implication that *H* is a measure of either (*a*) the uncertainty at the information source (i.e. the uncertainty generated by the source itself, as in i., ii., iii., iv. and v.) or (*b*) how information changes the uncertainty at the receiving end (referred here as the 'the information sink'). This means that *H* in (*a*) *eliminates uncertainty* whilst *H* in (*b*) is *itself eliminated uncertainty*. Should one opt for (*b*), Wu contends, then 'this kind of information quantity is no longer "entropy" but has the meaning and value of "negative entropy" which is opposite to "entropy"' and therefore *eliminates* both entropy and uncertainty. This is the reason that Shannon's theory, they conclude, 'has paved the way for related theories using negative entropy to explain the information.'[161]

If the first appearance of the term 'negentropy' is credited to Leon Brillouin,[162] it was Erwin Schrödinger who most famously called on it for scientific use, positing it as a metabolic force which, in opposition to entropy, is the sustenance of life itself: '[w]hat an organism feeds upon is negative entropy' he famously wrote in his seminal *What is Life?*[163], published in 1944. Schrödinger further suggested that 'the awkward expression "negative entropy" can be replaced by a better one: entropy, taken with the negative sign' and underlying it as 'itself a measure of order.'[164] Four years later, Norbert Wiener, as if following Schrödinger's recommendation, explicitly sign-changed Shannon's formula in his own pioneering *Cybernetics*:

> [w]e have said that amount of information, being the negative logarithm of a quantity which we may consider as a probability, is essentially a negative entropy. It is interesting to show that, on the average, it has the properties we associate with an entropy.[165]

161 Ibid. pp. 3-4.
162 See Leon Brillouin, "The Negentropy Principle of Information," *Journal of Applied Physics* 24:9 (1953), pp. 1152-1163, doi:10.1063/1.1721463
163 Erwin Schrödinger, *What is Life? The Physical Aspect of the Living Cell & Mind and Matter* (Cambridge: Cambridge University Press, 1967) p. 76, c.f. p. 78.
164 Ibid. p. 79.
165 Norbert Wiener, *Cybernetics: or control and communication in the animal and the machine* (Cambridge, MA:

In this respect there is certainly a continuity between the thinking of Wiener and that of Schrödinger, as Wu clearly points out:

> Schrödinger's negative entropy of life is used to calculate the ability to resist the spontaneous entropy increase in the living body, while the information quantity of Wiener is used to calculate the amount of new knowledge brought to the receiver by the message. Both have two basic points in common: [1] the system is open and [2] it can eliminate its own chaos by the environment. Here, what Wiener's information quantity calculates is exactly what Schrödinger's negative entropy calculates.[166]

And, crucially, it is precisely between this twin notion of *openness* and *exchange with the environment* where (neg)entropy appears as a pivot. Considering that, as Wiener explains, 'information is a name for the content of what is *exchanged* with the outer world as we adjust to it, and make our adjustment felt upon it'[167], then, Wu reasons, insofar as there is 'exchange' there is an 'in and out', which means that 'there is information not only within our subject but also in the external environment.'[168]

This "exchange" implies that, crucially, the creation of negentropy, whilst certainly a producer of form, *is still a producer of noise*. Furthermore, it produces noise *because* it produces form—or, to put it in Badiouian: *if* there is *form* on the side of the subject, *then* there is *noise* on the side of the state.

All of which, in turn, points to the (ethical, aesthetic, political, epistemological, erotic) slipperiness of, not only the distinction between information and noise, but of the notion of *noise-as-always-divided*, an evasiveness appearing in the ubiquitous vulgate question

The MIT Press, 1961) p. 64.

166 Wu, et al., op. cit. p. 5.

167 Norbert Wiener, *The Human Use of Human Beings: Cybernetics and Society* (London: Free Association Books, 1989), p. 17 (my emphasis).
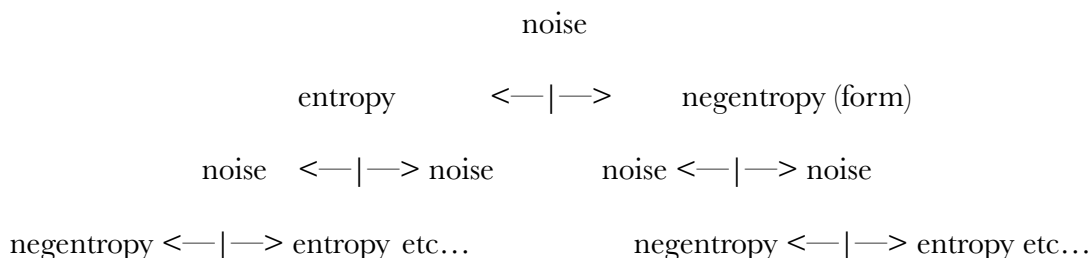
168 Wu, et al., op. cit. p. 9.

which, supposedly, is the ultimate marker of subjectivity: noise for *whom*? The fact remains that in addition, Wu continues,

> we should also note that the statements "information is the eliminated uncertainty" and "information is negative entropy" are also single-faceted in the sense of functional definition. Because, in the real world, the role of information is multifaceted and multilayered, it can not only eliminate uncertainty but also increase uncertainty; it can play the role of negative entropy, as well as the role of entropy.[169]

Negentropy not only *reduces* uncertainty: it *produces* uncertainty: *negentropy is, or may be, a producer of noise*. Which means that there is entropy and negentropy at either side of noise *and* there is noise at either side of (neg)entropy. Noise splits (neg)entropy *and* (neg)entropy splits noise: this configures a non-orientable manifold, the topology of which is difficult to visualise in the binary poverty of a two dimensional diagram:

$$\text{noise}$$

entropy   <—|—>   negentropy (form)

noise   <—|—> noise   noise <—|—> noise

negentropy <—|—> entropy etc…   negentropy <—|—> entropy etc…

All of the above might explain the reason why a notion such as 'entropy' is always already pregnant with its own negation, as in Malaspina's earlier Hegelianism: there is a split within, not only entropy, but *within the space of uncertainty itself*, wherein noise torsions into information.[170] And one cannot but agree that that is, indeed, a 'revolutionary' way of thinking about information,

---

169 Wu, et al., op. cit. p. 9.
170 Malaspina, EN p. 50.

if by revolution we mean the radical and unexpected transformation of a situation, (and not a sudden reversal understood as a return to something pre-existing). Such an approach, whereby the maximal value of information is the most revolutionary, implies an epistemological attitude to information that could not be further from the idea of negentropy, if the latter is understood as the negation of alternatives.[171]

The crucial word is here, of course, '*if*': (neg)entropy in the sense applied throughout this thesis is *not* the 'negation of alternatives', but, very much on the contrary, the opening up of new ones. Furthermore, through the creation of (up to that point) unknown forms and a-legal norms, (neg)entropy is itself the production of fresh uncertainty and noise. Such noise is, precisely, the *Noise of the Oppressed*.

This (neg)entropic dialectic is one which could be associated with the 'affirmative dialectics' common in Badiou's relatively recent work. 'All creations, all novelties, are in some sense the affirmative part of a negation', he asserts adding that 'the very essence of a novelty implies negation, but must affirm its identity apart of the negativity of negation. […] A creation or a novelty must be defined paradoxically as an affirmative part of negation.'[172]

And, as it happens, this "affirmative negation" brings us back to a notion which I have been associating all along with the subjective production of noise: the (neg)entropic trajectory of the truth procedure, viz., *subtraction* itself. Badiou could not be more

---

171 EN, p. 37-8.

172 Alain Badiou, 'Destruction, Negation, Subtraction: on Pier Paolo Pasolini', *Lecture at the Art Center College of Design* (Pasadena, 6 Feb. 2007), https://www.lacan.com/badpas.htm [accss. 20th Jul. 2014]. 'In some sense,' Badiou writes elsewhere, 'my attempt is to find a dialectical framework where something or the future comes before the negative present. […] The question is not whether we need to struggle or oppose, but concerns more precisely the relation between negation and affirmation. […] We have to try to understand exactly the conditions under which we may still have anything like the possibility of concrete negation. I believe this can only really be realized in the field of primitive affirmation, through something that is primitively affirmative and not negative.' Alain Badiou, 'Afirmative Dialectics: from Logic to Anthropology', *The International Journal of Badiou Studies* 2.1 (2013), pp. 1-14, https://badioustudiesjournal.org/archive/ [accss. 14 Aug. 2014], p 4.

explicit: 'I name subtraction the affirmative part of negation.' And, most importantly, the affirmation itself exists in the negation, independently of the implied destruction brought on by the latter: 'clearly, this subtraction is in the horizon of negation; but it exists apart from the purely negative part of negation. It exists apart from destruction.' In other words, negentropy is always already existing in entropy. Such is the affirmative and subtractive nature of (neg)entropy: an ek-sistence both in and beyond the negation of entropy.

It is not impossible to add, moreover, that Freire's prescription about the educational subjects becoming conscious of their own 'incompletion', is linked to something like a self-awareness of (neg)entropy. And precisely this link is the reason that such self-consciousness is a sure source of *anxiety*. For instance, in Bernard Stiegler's view, the link (neg)entropy-anxiety is amplified by the mirror of technological progress: 'just as there is no regression of the living,' Stiegler writes, 'but an increase in negentropy through the ineluctable complexification of genetic combinations, so also there is only technical progress.'[173] Negentropy is here a janusian reminder of entropy and, as such, a producer of (bio- *and* techno-logical) form as much as it is of anxiety: 'the threat of entropy makes possible the anguish in which the human experiences technical evolution', due to the latter appearing 'as a process of differentiation, creation of order [and] struggle against death.'[174] To put differently, (in)forming *inevitably* causes noise-inside.

It is clear in Stiegler's account that this anxiety is a symptomatic emergence of the death drive. If Shrödinger's statement that 'life feeds on negative entropy' strongly resonates with psychoanalytic overtones, this is because, as Norman O. Brown has pointed out, 'in Freud, the emphasis is on psychic entropy [is] elevated to a cosmic

---

173 Bernard Stiegler, *Techniques and Time 1: The Fault of Epimetheus* (Stanford CA: Stanford University Press, 1998) p. 54
174 Ibid p. 69

principle'[175]. As mentioned earlier, such thermodynamic notions are the core scientific conditioning of Freud's thought, as Serres was also quick to underline: 'he manifestly adopts as an initial model […] an energy theory based on thermodynamics and linked to two fundamental principles: the conservation of energy and the tendency toward death.'[176] Freudian time is, not only 'irreversible', as Serres points out, but also (neg)entropic through and through.

Anxiety, that human anguish referred to by Stiegler, will nonetheless have become the basal creative force driving the human subject. Indeed, 'far from signalling the disintegration of the psyche or testifying to the sovereignty of physical entropy', Brassier asserts, 'the experience of dying defies the law of entropic explication governing physico-biological extensity and marks the apex of psychic life as vector of negentropic complexification.'[177]

A creative vector which, moreover, will always require the supplement of *courage*, as implied in Malaspina's reading of John Keats' "negative capability": 'essentially the courage of allowing the representative structures of one's own "self" to dissolve.'[178]

And such en-couragement is, finally, what an education in noise needs to provide. One could say that, fundamentally, this is its *only* function: to bestow on the subject of truth the courage to keep going, to keep ploughing through the delicate uncertainty of negentropy, in spite of, against, and probably also *with*, the brutal certainty of entropy.

---

175 Norman O. Brown, *Apocalypse and/or Metamorphosis* (Berkeley: University of California Press, 1991) p. 182

176 Serres, *Hermes*, p. 72

177 Ray Brassier, *Nihil Unbound: Enlightenment and Extinction* (Basingstoke & New York: Palgrave Macmillan, 2007), pp. 194-5.

178 EN p. 182.

4.5. Esplanade II: Noise XOR Chaos

Chaos & chaos theory

The conceptual separation between noise and chaos is anything but trivial. And one should promptly stress the word *conceptual*: if inconsistency with science is never the intention, this is not, by any means, a mathematical essay.[179] Hence, a clarification is in order: throughout my thesis notions such as *noise* and *chaos* are treated *discursively*, that is to say *philosophically*—with the understanding that such philosophical discourse is somewhat *conditioned by* (or, at the very least, *not inconsistent with*) the *scientific* aspect of these notions.

One might ask, however, if the threshold wherein a discourse stops being scientific and turns *philosophical* is always clearly identifiable. To put this in Badiouian speak: is the line of *suture*—the border between conditioning and suturing—always clearly identifiable?[180]

With all that in mind—and before delving on philosophical discourses on chaos—let us briefly recall some (meta)scientific propositions and definitions which still dwell on the scientific side of the notion. These propositions outline a relatively modern field which marks its scientific specificity by adopting the name "Chaos Theory" (as we shall shortly see, mythical and philosophical notion of chaos long predate these modern, scientific ones). Within this young field, the terms "chaos" and "chaos theory" acquire very

---

179 There is neither any pretence that I actually possess the technical skill required for such a task.

180 In this respect, Badiou's identification of ontology with mathematics is a clean, subtractive cut. There is no scientific suture in Badiou's philosophy simply because *there is no ontology in Badiou's philosophy*— ontology belongs to mathematics, period. From this, his insistence that his (philosophical) elaborations on such (mathematical) discourse on being, be referred to as *meta*ontological.

specific meanings:[181]

- Chaos deals with long-term evolution—how something changes over a long time. A chaotic time series looks irregular.

- Chaos happens only in deterministic, nonlinear, dynamical systems.

- Chaos is sustained and disorderly-looking long-term evolution that satisfies certain special mathematical criteria.

- Chaos *theory* comprises the principles and mathematical operations underlying chaos.

Two important implications derived in the theory are that (i) long-term predictions under chaotic conditions are meaningless and (ii) complexity can emerge from simple causes.

Finally—and seemingly contradicting most vitalist, chaos-conditioned discourses—it is key to underline that 'chaos is *difficult to identify in real-world data* because the available tools generally were developed for idealistic conditions that are difficult to fulfil in practice.'[182] Chaos theory involves mathematical, abstract constructions: it is *not* a natural science.

We will observe some of these (modern) *chaos-theoretically* related aspects as we move towards the (ancient) philosophical origins of the notion. Let us first take a closer look at some of the concepts which are directly and indirectly alluded to in the outline above, together with their interrelations.

---

181 The following table is adapted from Garnett P. Williams, *Chaos Theory Tamed* (Washington, DC: Joseph Henry Press, 1997), p 17.
182 Ibid, p. 16 (my emphasis).

Like noise itself, chaos partakes of the issue of *determinism*. The (mathematical, philosophical, epistemological) complexity of this matter is reflected in the non-transparent relation between determinism itself and *causality*: in this respect, it might be useful to recall Max Born's distinction:

> I think one should not identify causality and determinism. The latter refers to rules which allow one to predict from the knowledge of an event *A* the occurrence of an event *B* (and vice versa), but without the idea that there is a physical timeless (and spaceless) link between all things of the kind *A* and all things of the kind *B*. I prefer to use the expression 'causality' mainly for this timeless dependence.[183]

Most importantly, let us not forget that a causal system *can also* be non-deterministic as is the case with quantum mechanics. This is precisely the main point of contention of Ilya Prigogine: taking issue with the classical consensus (which includes relativity and quantum mechanics), Prigogine's radical non-causality advocates a fully non-reversible conception of physical laws, in some ways positing a radical realism of the arrows of time; considering that this would, in turn, imply the reality of entropy—as opposed to it being a (philo-idealist) function of some lack of information, or ignorance, from the part of the observer—and considering the janusian, noise-mediated relationship between entropy and negentropy, Prigogine's de-suturing of entropy from ignorance is of no little relevance. From this perspective, a position such as Murray Gell-Mann's, whereby 'entropy can be regarded as a measure of ignorance',[184] is a token of a set of scientific arguments that, in Prigogine's view, 'are untenable. They imply that it is our own ignorance, or coarse graining, that leads to the second law'. Whereas

---

183 Max Born, *Natural Philosophy of Cause and Chance*, (Oxford: Oxford University Press, 1949), p. 8.
184 Murray Gell-Mann, *The Quark and the Jaguar* (London: Abacus, 1994), p. 219.

Prigogine's position—strongly resonating with those taken by, say, Serres, Atlan or Malaspina—is, as we already saw, that 'irreversibility leads to *both* order and disorder'.[185]

Determinism & predictability

The already entangled relation between determinism and causality produces an even more complex matrix of interrelations with the introduction of the notion of *predictability* (a notion, as mentioned earlier, key to Malaspina's analysis of noise).[186]

Charlotte Werndl's paramount work in this field has clearly shown that 'determinism and predictability are very different notions. In particular, in recent decades chaos theory has highlighted that deterministic systems can be unpredictable in various different ways'.[187] Explicitly deploying the scientific conception of chaos, Werndl explains that 'chaos theory studies the behavior of systems that are deterministic but at the same time show complicated behavior and are random and hence also unpredictable.'[188] Yet, the peculiarity of chaotic systems is that 'they are unpredictable in a way other deterministic systems are not'.[189] Within the chaos theory speech-community, such specific notion of unpredictability is referred to as *asymptotic unpredictability*. For Werndl, however, such a notion of unpredictability is not unique to chaotic systems and therefore alternatively proposed that '*approximate probabilistic irrelevance* is the kind of unpredictability that is unique to chaos.' And, remarkably enough, '[u]nlike asymptotic unpredictability, approximate probabilistic irrelevance is a

---

185 Prigogine, *The End of Certainty*, pp. 25-6 (my emphasis).
186 see subchapter 4.3, p. 198.
187 Charlotte Werndl, 'Determinism' (2016), http://philsci-archive.pitt.edu/id/eprint/12166 [accss. 07/01/2021] p. 1; published in *The Routledge Companion to Free Will*, ed. by Meghan Griffith, Kevin Timpe & Neil Levy (London & New York: Routledge, 2016), pp. 669-679.
188 Ibid.
189 Ibid.

probabilistic concept of unpredictability.'[190]

> According to this concept, any measurement (i.e. knowledge of the initial states that the system may currently be in) is irrelevant for practical purposes for predicting outcomes sufficiently far in the future, i.e. makes it neither more nor less likely that the outcome is in any region of phase space of interest. This means that not only is it impossible to predict with certainty in which region the system will end up in in the sufficiently distant future, but that also for practical purposes knowledge of the currently possible initial states neither lowers, nor hightens, the probability that the system will end up in a certain region of phase space in the sufficiently distant future.[191]

Now, formally speaking, noise is the behaviour (the output) shown by random—i.e. *stochastic*—systems: full knowledge of every detail of the state of a random system still renders any observer unable to predict its state at a future time (a coin toss is an example of a random behaviour: the fact that one knows the outcome of a result does not help in any way to predict the outcome of the following toss). Chaotic systems, for their part, show *close dependancy on initial conditions*: any disturbance in the initial state will exponentially shoot up with time. Such sensitivity to initial conditions does not, technically speaking, entail stochastic behaviour, which is always already random at *all* times—a difference which marks, in turn, the distinction between chaos and noise.[192] Werndl's not insignificant conclusion is that chaos, from an observer's (i.e subjective) perspective, does indeed behave stochastically: '[t]here are a host of results', Werndl

190 See: Charlotte Werndl, 'Are Deterministic Descriptions and Indeterministic Descriptions Observationally Equivalent?', *Studies in History and Philosophy of Modern Physics* 40 (2009), pp. 232-42 (my emphasis).

191 Werndl, 'Determinism', p. 3.

192 For more technical, mathematically involved, analyses on the distinction between noise and chaos, see: Martín Gómez Ravetti et al., 'Distinguishing Noise from Chaos: Objective versus Subjective Criteria Using Horizontal Visibility Graph' *PLoS ONE* 9:9 (2014), e108004, doi:10.1371/journal.pone.0108004 [22 Apr 2018], Daniel Kaplan and Leon Glass, 'Direct Test for Determinism in a Time Series', *Physical Review Letters* 68:4 (1992), pp. 427-30; Temple He & Salman Habib, 'Chaos and Noise', *arXiv:1211.4667v1 [nlin.CD]* (2012), [accss. 22 Apr 2018]; Osvaldo Anibal Rosso et al, 'Distinguishing Noise from Chaos', *Physical Review Letters* 99 (2007), pp. 154102_1-4.

concludes, 'showing that *deterministic models are often observationally equivalent to stochastic models.*'[193]

Probability, (dis)order & a 'conceptual monstrosity'

If the probabilistic element in chaos comes not without a certain surprise, there was never any doubt of its deterministic behaviour. As Garnett Williams explains 'a chaotic sequence looks haphazard but really is *deterministic*, meaning that it follows a rule. That is, some law, equation, or fixed procedure determines or specifies the results.'[194] What this implies is that 'the two terms "random" and "deterministic" aren't mutually exclusive; anything random is also deterministic, and both terms can characterize the same sequence of data.'[195] This seemingly incongruous notion is, nevertheless, anything but new.

As noted by Malaspina, it was René Thom's catastrophe theory that provided in the 1960s a 'deterministic framework' wherein 'aligning mathematical rationality with the non-linear and resulting in the conceptual monstrosity born from the necessarily unpredictable: deterministic chaos.'[196] And it is precisely for this reason that, in

---

193 Werndl, 'Determinism', p. 4 (emphasis in original). As Werndl explains in more detail, 'a deterministic model such as the model of the evolution of the daily amount of precipitation and a stochastic model such as the sequence of coin tosses are said to be observationally equivalent just in case the stochastic model and the deterministic model relative to the coarse-graining corresponding to the possible measurements give the same predictions. More specifically, the predictions obtained from the stochastic model are the probability distributions over the sequence of outcomes. Concerning the deterministic model, recall that a probability measure is defined over all possible states. Consequently, the predictions derived from the deterministic model relative to a certain coarse-graining (representing the possible measurements) are the probability distributions over the sequences of observations of the deterministic system. Hence what is meant by the phrase that the deterministic model and the stochastic model give the same predictions is that the possible observed values of the stochastic system and deterministic system are the same, and that the probability distributions over the sequences of observations of the deterministic model and the sequences of outcomes of the stochastic model are the same' (ibid.).
194 Williams, *Chaos Theory Tamed*, p. 15.
195 Ibid. p.22
196 EN p. 112

Malaspina's view, it makes no (mathematical) sense 'to equate even chaos with disorder, since mathematical chaos, for instance as treated it in catastrophe theory by René Thom, is deterministic—determined and thus orderly in its necessary unfolding, even if its graphic representation is baffling and unpredictable'[197]. And therefore, Malaspina argues, it would be equally incorrect to equate entropy with disorder—a position which, as we shall shortly see, would not find the disapproval of the venerable Hesiod himself.

Moreover, in Malaspina's analysis that which marks this crucial distinction is precisely that key element—*probability*: to equate entropy with disorder, 'would be wrong also because entropy is a concept belonging to the field of probability and is thus inherently not deterministic and thus cannot be said to contravene a deterministic order—and how can order be anything other than deterministic?'[198] But more fundamentally, insofar as the whole deterministic process proceeds from the imperfect (i.e. always unfinished, inconclusive) observation of a thereby incomplete (i.e. castrated) observer, there will have existed, always already, an immanent gap between probability and determinism:

> the impossibility of an observer's perfect knowledge of initial conditions of a deterministic chaotic system, calls for the probabilistic method, which in turn introduces the sliver of in-determinacy at the microscopic level of observation into an overall highly performing method of prediction. Even if mass phenomena are statistically mastered and allow for an impressive power of prediction, this sliver of indeterminacy in turn introduces an irreducible unpredictability and with it the *irreversibility* of any probabilistic process with increasing entropy. This sliver of irreducible indeterminacy in the probabilistic process thus severs, *irreversibly*, probability from determinism.[199]

---

197 EN p. 200
198 Ibid.
199 EN p. 201

I would complement Malaspina's insight by adding that such 'sliver of irreducible indeterminacy' is precisely what is marked by the bar splitting the subject in Lacan's *matheme*: $\$$. Which means that, lo and behold, we are finding here traces of our own *Subject of subjects* of education (which, as Ruda has explained, appears in and through the subjective operation of the bar itself).[200] This might be a not entirely surprising encounter—nonetheless, the presence of the Subject has here a somewhat anticipant quality, both heraldic and prescriptive: it announces that, should something like *deterministic noise*—an even fouler monstrosity than deterministic chaos—ever appear in the epistemological horizon, the philosophico-educational challenge will be to hold on to an idea of noise such that indeterminacy (as a figure of the void) will always already be built-in in it. A prescription which, ultimately, amounts to the following affirmation: *Noise will be noise as long as it remains indigestible to the knowledge and to the power of any form of state whatsoever.*

Chaos unbound

If, as some would have it, *chaos* is strictly speaking a *theory* (and a young one at that, only developed in the 1970s) and if, simultaneously—and as already noted—it is presently 'extremely difficult to identify [it] in real-world data': to what signified(s), then, might the single word "chaos"—i.e. chaos minus the qualifier "theory"—refer to? It would seem that in the same way as "noise" becomes a noisy metaphor when unmoored from any technical specificity, the term "chaos", when not referring to its specific scientific field,

---

200 'Philosophical forcing works by taking the very position of the barring, that is to say of the mark of castration. It is not the position of the bar—as the bar is not one—but in a very precise sense the position of the very operation of the barring, that is to say the very condition for the emergence of a new truth (the split between event and the consequences that it produces). The barred barred subject thus takes the position of the anticipated subject by insisting on the impossible possibility of the place of (any future) barring.' Ruda, *For Badiou* p. 185, n. 38.

becomes itself a self-referential *chaotic signifier*.

And so, to repeat once again: what are we referring to when we invoke the signifier "chaos" outside of the specific field of "chaos theory"? A vulgate answer seems easy enough: it undoubtedly has come to suggest, today, a notion coarsely associated with disorder, confusion, amorphousness, unpredictability. It has become the negative of the word "cosmos" (κόσμος, a term of alleged Pythagorean origin), it itself being the opposite notion pointing towards some sort of universal order.

Cosmos and/or chaos: despite appearances, this pair of opposites was not in any way born together as a disjunction[201]. Indeed, if the Presocratic parenthood of the term κόσμος is unclear (Pythagoras? Archytas? Philolaus? Parmenides?), χάος has itself a well-documented birth certificate.

And, remarkably so, we do not find anything in there that speaks to us of *disorder*.

Cosmogonies 1: Χάος

The appearance of the word "chaos" (χάος) is first attested in Hesiod's *Theogony* (composed circa 700 BCE), a work predating the pre-Socratic philosophers for almost a century.[202] As such, it interpellates the reader with a prototypical interrogation: is it to be read as a religious text or a poetic metaphor? Is it an epic narrative with serious historical pretence? Is it a philosophical meditation, or even a work of (proto)scientific inquiry? Clearly though, each one of those categories are rendered meaningless by the actual con-text of the *Theogony* itself, insofar as *its reading will always already involve an act of*

---

201 Joyce's fusing gesture, picked up by Deleuze and Guattari, notwithstanding: '[t]he world has become chaos, but the book remains the image of the world: radicle-chaosmos rather than root-cosmos.' Deleuze & Guattari, *A Thousand Plateaus*, p. 6.
202 See Hesiod, *Theogony*, 116, 123, 700, 740 & 814.

translation. 'Hesiod lived in an age innocent of philosophy' Norman O. Brown reminds us, and '[w]e must therefore translate his speculations into our own idiom, which is primarily philosophical.'[203]   But even if we settle on reading/translating the *Theogony* (and, hence, the notion of chaos therein) as a *philosophical* text, this might not completely clear the air. We need to also bear in mind that, as Francis Cornford points out, the passages from religion, through myth, to philosophy remain somehow always unbroken:

> there is a real continuity between the earliest rational speculation and the religious representation that lay behind it; and this is no matter of superficial analogies. […] Religion expresses itself in poetical symbols and in terms of mythical personalities; philosophy prefers the language of dry abstraction, and speaks of *substance, cause, matter*, and so forth. But the outward difference only disguises an inward and substantial affinity between these two successive products of the same consciousness. The modes of thought that attain to clear definition and explicit statement in philosophy were already implicit in the unreasoned intuitions of mythology.[204]

This is an idea which we find most strongly developed in Serres, for whom such continuity not only exists between philosophy and science (a mere bifurcation), but between the 'supposedly antithetical languages' of science and *myth*.[205] Serres, whose encyclopaedic non-methodology covers 'the three great modes of knowledge: philosophic, scientific and mythic'[206], is himself unequivocal on this point: 'it is not, it has never been the case that science is on one side and myth on the other. In a given myth, millennial tradition, or barbarous thought, the proportion of relevant science is probably as great as the proportion of mythology that envelops any given science'.[207] And in the

---

203 Hesiod, *Theogony*, trans. with an introduction by Norman O. Brown (New Jersey: Prentice Hall, 1953), p. 15

204 Francis M. Cornford, *From Religion to Philosophy: A Study of the Origins of Western Speculation* (New York, NY: Harper & Bros Publishers: 1957), p. v.

205 See Harari, & Bell, 'Introduction', p xviii

206 Ibid. p. xv

207 Serres, *Hermes*, p. xix.

signifier *chaos* we find a living testament of such semantic and epistemological continuity. Serres' commentary, however, refers exclusively to a matter of *methodology*. Which means that, if we are to deploy the term *chaos* as a purely philosophical term, we are still left with the issue of 'desuturing' it both from its original poetic *jouissance* as much as from its contemporary scientific inscription.

In the name "chaos" we have the case of a migrant signifier which, starting its journey in the *Theogony*, travelled for nine centuries, from Hesiod through Aristotle to Deleuze & Guattari, in a forking path which bifurcated at some point into science, branching off in a new trajectory signalled with the names of Henri Poincaré, Andrey Kolmogorov, Mary Cartwright, Edward Lorenz and Benoit Mandelbrot. Therefore, one might say, when engaging with the idea of chaos in a speculative, discursive manner, one could never be accused of committing any 'imposture' whatsoever—as border-guards of empirical scientism such as Sokal and Bricmont might be compelled to do. If anything, the opposite is quite the case: chaos is first and foremost a poetico-philosophical concept which travelled for nine centuries from its original home in poetry and myth until its relatively recent adoption by science (and, even in some cases, one might add that the trip continued in a further loop *from science back to philosophy*).

Such a journey has inevitably left behind a long and winding etymological trace, both intriguing and illuminating, and one which might be worth now following. After all—and without forgetting Vidal-Naquet's earlier warning[208]—if the etymology of chaos 'is already pointing towards some route' as Guilherme Gontijo Flores observes, 'perhaps there is a need to reflect some more on this issue.'[209]

---

208 See subchapter 4.1, p. 160 n. 35.

209 Guilherme Gontijo Flores, 'Caos Hesiódico: Agonia Cosmogônica Do Mistério', *Revista Eletrônica de Estudos Literários*, 1:5:5 (2009) www.portaldepublicacoes.ufes.br/reel/article/download/3543/2811 [accss. 19 Apr. 2018], p. 5.

A first and foremost observation regarding the primigenial meaning of the term χάος in its Hesiodic, pre-4th century BC use, is that 'it does not contain the idea of confusion or disorder' as Martin West comments in his translation of the *Theogony*.[210] Rather differently, chaos bespeaks a gap, an emptiness, an opening, a yawn, or an open mouth—a primordial yawning. 'In the modern mind' Cornford explains,

> the word Chaos has come to be associated with a primitive disorder in which, as the Ioanian pluralists said, "all things were together". This is not the sense of the word in sixth- and fifth-century Greek. "Chaos" meant the "yawning gap", between the fiery heaven and the earth, which could be described as "empty" or as occupied by the air.[211]

The entry for 'χάος' in Robert Beekes' authoritative *Etymological Dictionary of Greek* informs us that 'an original meaning "hole, empty space, yawning opening" is quite thinkable for χάος.' It was, therefore, a term 'since long connected' with χάσκω, χάσμα, χανεῖν etc.'[212] One finds in these words nothing resembling disorder or confusion: the verb χάσκω (*cháskō*) means "to gape, yawn, open the mouth wide" (it derives from PIE root *$ǵʰ$an-: "break open, to yawn") and is itself root-cognate of the noun χάσμα (*chásma*): "gaping hole, abyss, chasm" (and as such is used by Hesiod in line 704). Likewise, the noun χάνος (*chános*) indicates "throat, mouth", and is directly linked to χανεῖν (*chaneín*): "gaping, open wide, expanded, immeasurable' and later with ἀχάνεια

---

210 See Hesiod, *Theogony and Works and Days*, trans. by Martin Litchfield West (Oxford & New York: Oxford University Press, 1988) p. 64.

211 Francis Macdonald Cornford, *Principium Sapientiae: The Origins of Greek Philosophical Thought*, (Cambridge: Cambridge University Press, 1952), p. 194. Kirk and Raven remark that 'the common modern sense of chaos as disorder […] may be Stoic in origin' p. 27 (Geoffrey S. Kirk & J. E. Raven, *The Presocratic Philosophers: A Critical History With a Selection of Texts* (Cambridge: Cambridge University Press, 1957), p. 27). Considering contemporary, post-Deleuzian takes on the matter, this is not an uninteresting observation.

212 Robert S. P. Beekes w/Lucien van Beek, *Etymological Dictionary of Greek* (Leiden & Boston: Brill, 2010), p. 1614

(*acháneia*: "wide hole, immeasurability"[213]). Χάος, χάζω, χαίνω, χωρίς, χώρα: all of these cognates suggest, as Cornford explains, notions related to 'opening, separation, hollow.'[214]

There is, moreover, an interesting and controversial relation of χάος with χώρα (*chóra*, "room, space, interspace" but also "place, position, rank, location") made by Aristotle. In a passage of the *Physics*, concerned about the proper genus of τόπος (*tópos*: "place"), and after associating the latter with a notion of empty space (and the issue of how can a body come to occupy it), Aristotle connects χάος with both χώρα and its variation, χῶρος (*chóros*: "region, estate, land, country").[215] However, if a potential link of chaos with an idea of "unbound", or the "unlimitedness" of ἄπείρων (*apeírōn*) is opened up by Aristotle's inquiries, this possibility is promptly dismissed by Kirk & Raven, for whom Aristotle's interpretation may 'be rejected immediately' as it is a concept 'much later than the *Theogony*.'[216] Cornford, for his part, seems to agree with their rebuttal: 'I do not think that chaos is ever called ἄπειρον [sic], and if it were, that would mean no more than "immense' as applied to earth and sea.' The only possible etymological route leading from chaos to the infinite is, it seems, cut. All in all, every source seem to suggest that 'in the sixth and fifth centuries the word *chaos* still carried its true etymological associations with χάσμα "yawn" [and] χασμᾶσθαι "to gape"'.[217]

But how does Hesiod actually deploy the notion of χάος in the *Theogony*? How does it actually operate in his cosmogonical epic? One will find that the word makes five appearances throughout the narration, each time with a slightly dissimilar function (albeit every time with the same signification): there is a *generic*, or *generative* (or even

---

213 Ibid, p. 1616.
214 Cornford, *Principium Sapientiae*, p.194.
215 Aristotle, *Physics*, IV 1, 208 b30; c.f. Beekes, *Etymological Dictionary of Greek* pp. 1614 & 1654-5).
216 Kirk & Raven, *The Presocratic Philosophers* p. 26.
217 Cornford, *Principium Sapientiae*, pp. 194-5.

genetic) chaos at line 116: 'first of all the chasm' (χάος γένετ' [*xáos génet*]); there is an *ek-static* (or even *extimatic*) chaos at 123: 'from, out of the chasm' (ἐκ χάεος [*ek xáeos*]); at 700 happens 'the prodigious conflagration [that] took possession of the chasm' (καῦμα δὲ θεσπέσιον κάτεχεν χάος [*kavma de thespésion kátexen xáos*]); then, at 740 there appears a 'great chasm' (χάσμα μέγ' [*xásma meg*]) and finally we have a 'gloomy chasm' (χάεος ζοφεροῖο [*xáos zoferío*]) at 814. If the arch from genesis and extimacy, through massive nuclear fusion and expansion ending in the big chill of the χάεος ζοφεροῖο seems to uncannily resonate with the familiar cosmogenetic narratives of contemporary physics, the crucial line is 116: it is there where we find its "purest" meaning, so to speak, one that is kept unchanged throughout.

And it is also there where we can hear the richest spectrum of overtones, symptomatically ringing in the subtle differences in interpretations of Hesiod's primigenial chaos.

Line 116 reads: ἦ τοι μὲν πρώτιστα Χάος γένετ'. It is translated as 'first came the Chasm' by West, for whom "chasm" is indeed 'the literary meaning for the Greek name Chaos; it does not contain the idea of confusion or disorder.'[218] In an earlier translation West would comment that Χάος is 'best translated Chasm. It is a yawning space […] dark and gloomy', adding that 'Pseudo-Oppian uses the word χάος of a gaping throat' and alluringly compares its paradoxical appearance as the gap between Heaven and Earth which simultaneously precedes their creation, 'like the grin before the Cheshire Cat).'[219] Glenn Most, for his part, translates line 116 as 'in truth, first of all Chasm came to be', noting that Χάος is '[u]sually translated as 'Chaos'; but that suggests to us, misleadingly, a jumble of disordered matter, whereas Hesiod's term indicates instead a

---

218 West, *Theogony*, p. 64.
219 Hesiod, *Theogony*, ed. with prolegomena & commentary by Martin Litchfield West (Oxford: Clarendon Press, 1966), pp. 192-3.

gap or opening.'[220] And even if Geoffrey Kirk and J. E. Raven opt for 'first of all Chaos came-to-be', promptly noting that 'the primacy of Chaos is remarkable' they clarify that 'the noun is derived from √χα meaning "gape, gap, yawn", as in χαίνειν, χάσκειν, etc.'[221] Most interestingly, and straight to the (uncannily Badiouian) point, Brown translates Χάος as none other than *the proper name of being* itself: 'first of all, the Void came into being', noting that '[t]he Greek word is Chaos; but this has a misleading connotation in English.'[222]

Hesiod's account is already symptomatic of what one could describe as a self-belonging split: a chasm, or gap (a yawning, noise-emitting mouth), an undifferentiated a-morphity, ready to be (in)formed. It would seem that the Hesiodian mythico-cosmogonical chaos appears neither messy, nor disordered, but still pregnant with possibilities: an opening, a gap *and* the possible things issuing from that gap, or frontier, or limit; a liminal threshold *and* the not-yet-things minimally existing in it, or under it: in-existing under the limit, a sub-liminal—sublime—*inexistance*.

Cosmogonies 2: **Genesis 1:2**

In the New Revised Standard Version (NRSV) of the *The Book of Genesis* we read that 'the earth was a formless void and darkness covered the face of the deep, while a wind from God swept over the face of the waters.'[223]

The adjectival 'formless and void' is, of course, a mere rendering into modern English of an ancient notion which has traveled long and far. We can place its origin in

220 Hesiod, *Theogony, Works and Days, Testimonia*, ed. & trans by Glenn W. Most (Cambridge, MA: Harvard University Press, 2006), p.13 n. 7.
221 Kirk & Raven, *The Presocratic Philosophers*, pp. 25-7.
222 Brown, *Theogony*, p. 56
223 *Gen.* 1:2 (NRSV).

the Biblical Hebrew תֹ֙הוּ֙ וָבֹ֔הוּ (*tōhū wā-bōhū*) as found in the *Leningrad Codex*.[224] Interestingly enough, the Hebrew term *tōhū wā-bōhū* is associated, not with "disorder", but with a notion of "chasm", or "abyss".

Now, if as we saw above, the English word *chasm* is a loan from Greek χάσμα— in turn a root-cognate with χάος—the word "abyss" itself comes from the Greek ἄβυσσος (*abysos*), an adjective indicating something bottomless, boundless and unfathomable—impossible to understand, *inaccesible to knowledge*; as a noun it names a bottomless pit and sometimes the subterranean underworld itself (related to βυθός (*bythós*): the depth, as in the depth of the sea, or the deep water). Once again, there is nothing here which betokens disorderliness—unless, that is, one equates "unkowability" with dissorder.

Most noticeably, though, neither the word "chaos", nor anything resembling disorder or muddle, is to be found in the 3rd century BC *Septuagint*,[225] the earliest Koine Greek version of the Old Testament. Therein the original Biblical Hebrew תֹהוּ וָבֹהוּ (*tōhū wā-bōhū*) is translated by the Alexandrian scholars as ἀόρατος καὶ ἀκατασκεύαστος ('*aóratos kai akataskévastos*')—literaly: 'unseen and unformed'. These lines, which will eventually become the "formless and void" that we find today in the modern versions of *Genesis* 1.2, seem to signify, rather than anything resembling the (vulgar) notion of "chaos", something denoting nothingness, emptiness, formlessness, voidness.[226] In other

---

224 Dated from around 1008~1009 CE, the *Leningrad Codex* is the oldest complete manuscript of the Masoteric Hebrew Bible. The Masoteric Text itself—the authoritative edition of the Old Testament—was compiled and edited from various ancient manuscripts by Jewish scholar-scribes between the 7th and 10th century CE in Palestine and Babylonia. As for the Book of Genesis, bible scholars seem to agree that it was originally assembled around the 5th-4th centuries BCE, with 250 BCE as *terminus ad quem*.

225 The *Septuagint* is the earliest extant translation of the Hebrew Bible into Koine Geek. The work was commissioned to be included in the Library of Alexandria by Ptolemy II to seventy Jewish scholars— hence the name, derived from the Latin *versio septuaginta interpretum*: "the translation of the seventy interpreters" (originally from the Greek η μετάφρασις τῶν Ἑβδομήκοντα (*hē metáphrasis tōn hebdomḗkonta*).

226 Most modern European versions of the Old Testament seem to agree on this rendering of *Gen.* 1.2: 'formless and empty' (NIV), 'without form and void' (NKJV), 'without form or shape' (NABRE), '*inanis et vacua*' (VULGATE), '*desordenada y vacía*' (RVR1995), '*informe et vide*' (LSG), '*informe e vuota*' (NR2006), '*wüst und leer*' (LUTH1545); an exception can be found in *La Bible du Semeur* (BDS) from 1999, in the somewhat impetuous '*chaotique et vide*'.

words, something very similar to the Hesiodic χάος.

The *Book of Genesis* elaborates, not unlike the *Theogony*, yet another "creation from nothing" cosmogony wherein chaos—even if in the former the term itself does not appear as such—sounds more like an opening, or a void, rather than a disordered jumble of matter. What these narratives therefore share, is the notion of an abyssal *opening of nothing*, a genealogy beginning in a primeval parthenogenetic void (something which could account for the pleonasmic accumulation of the symbolic imagery presented by these creation myths).

Redundancy, self-differentiation, self-contradiction, paradox—noise: all inevitable *and* necessary remainders of the passage from an abyssal void of χάος to creation, succession and transmission.

Thus the paradoxical dialectic between entropy and negentropy, destruction and creation, affirmation and negation, wherein the disjunction between the *form* and the *de-formed* can only be related through an *in-forming* in potentially infinite channels of nil-dimensionality. In-formation, then, as the atom of relation transducing (*schizducing*) a seed of disturbance, a minimal difference coded in an infinitesimal bit: διαφορά [*diaphorā́*], Lucretius' *clinamen*, Derrida's *différance*, Badiou's *inexistance*, Floridi's *datum*.

In that respect, one might ask: is there such an impassable gap, then, between the poetico-mythical narratives briefly outlined above and the cosmological descriptions of science? In lieu of an answer, one might affirm: it is only *in* noise (*from* noise, *within* noise) that we *may* find some of (what could have become) an infinite number of possible connecting routes, as Serres himself tirelessly claimed, and as Malaspina's own cosmological account—at once scientific *and* poetic—attests to:

[g]alaxies form and even life emerges against the predicted entropic dissipation of energy. The negentropic capacity of the cosmos to pull itself together at all levels, from gravitational order to biological organization, defies the idea of the cosmos as a closed system vowed to entropic death. […] Disorder, quantum uncertainty, entropic diffusion of heat are no longer seen as the mere negation of order, but interweave constraints and determinism with the indelible singularity of evental conditions. The emergence of structure can now be thought via the theory of metastable systems such as Prigogine studied them.[227]

---

227 EN pp. 111-2.

5. Noise Inside

Heard melodies are sweet, but those unheard

Are sweeter; therefore, ye soft pipes, play on;

Not to the sensual ear, but, more endear'd,

Pipe to the spirit ditties of no tone[1]

5.0. Intro: a Lacanian Cartography of the Subject

Whereat Malaspina, in her journey in search of noise-inside, follows the psychological cartography of Steven Sands and John Ratey, I will, in my own exploration, follow Lacan. The purpose of the journey, however, seems to me to be exactly the same.[2]

There is, at bottom, a shared intuition: noise carries important overtones that can only be heard within the depths of a resonating subject. Once again, the choice of itinerary is on the side of an axiomatic decision: Malaspina's choice leans towards psychiatry and cognitive science, whereas mine remains faithful to psychoanalysis. In lieu of a justification for this option, I will let the following quote of Alenka Zupančič do the talking:

> [a]t the moment when philosophy was just about ready to abandon some of its key
> central notions as belonging to its own metaphysical past, from which it was eager to
> escape, along came Lacan, and taught us an invaluable lesson: it is not these notions

1 John Keats, 'Ode on a Grecian Urn', *The Oxford Book of English Verse*, ed. by Arthur Thomas Quiller-Couch, (Oxford: Clarendon, 1919), pp. 729-30 (p. 729).
2 Malaspina uses the term 'mental state of noise', which she indeed borrows from psychiatrists Steven Sands and John Ratey: see EN, part Three, pp. 165-218; see also Sands & Ratey, 'The Concept of Noise'.

themselves that are problematic; what can be problematic in some ways of doing philosophy is the disavowal or effacement of the inherent contradiction, even antagonism, that these notions imply, and are part of. *That is why, by simply abandoning these notions (like subject, truth, the real...), we are abandoning the battlefield, rather than winning any significant battles.* This conviction and insistence is also what makes the so-called "Lacanian philosophy" stand out in the general landscape of postmodern philosophy.[3]

The fact that Lacan, as Elizabeth Roudinesco points out, 'turns his back' on both the 'lifeless positivism' of scientism and the 'obscurantism' of subject-less postmodernisms, makes his thinking so relevant today.[4] And, as it is well known, Badiou agrees wholeheartedly with this antipositivism ('positivism is more often than not an inverted religion') and the truth-lacking obscurantism of what he terms democratic materialism:

> [t]oday, these two pitfalls are more threatening than ever! And they form our conjuncture! The secret alliances between these two supposed adversaries—narrow scientism and superstitious obscurantism—is not, moreover, a recent phenomenon. This is why we need Lacan so much.[5]

If the route that we are to follow is signalled at every juncture with signposts that read *language*, *subject*, *truth*, *humanisation*, this is purely on the grounds that, as Roudinesco remarks,

> [i]f you obscure what is proper language and psychic subjectivity in the human, the path to a fascistic scientism is opened up: you claim to understand man by examining his neurons, you treat his suffering without listening to his speech, bombarding him with

3 Alenka Zupančič (interviewed by Agon Hamza & Frank Ruda), 'Philosophy or Psychoanalysis? Yes, please!', *Crisis & Critique* 6:1 (2019), pp. 435-53 (p. 435, my emphasis).
4 Alain Badiou & Élisabeth Roudinesco, *Jacques Lacan Past and Present: A Dialogue*, trans. by Jason E. Smith (New York: Columbia University Press, 2014) pp. 15, 17.
5 Ibid. p. 17.

medications in a purely mechanical fashion. Where is the subject in this? What happens to his singularity? It is held in content, whisked away.[6]

When the void is internalised, the murmur of the indiscernible will have produced the universal affect: anxiety; anxiety is the affect of noise, of disorder: and, for Badiou, 'Lacan is a great thinker of disorder.'[7]

However, there will be differences with Lacan's notion of the subject, specifically with his overdependence on language. And most crucially, with what can be seen as a lack of agency in Lacan's subject.

> By "subject" Lacan means the subject of the unconscious—the subject split by its incorporation into the symbolic order and sustained as a gap in the discourse of that collective Other whose desires structure this unconscious. Badiou's subject, by contrast, is in a certain sense *consciousness in its purest forms*: decision, action, and fidelity. Nevertheless, several characteristic traits of Badiou's subject can be more or less directly attributed to Lacan.[8]

Ultimately, if it is true that 'Badiou's notion of the subject does not comply either with Lacan's structural emphasis on language and the signifier' or with the Lacanian proscription of any access to the real, '[a]ll the same, [...], Badiou can fairly claim to have arrived at a reconstruction of philosophy—that is, a reasoned articulation of subject, truth, and real—that passes through rather than around the challenges posed by Lacan's ambivalent engagement with the Cartesian tradition'.[9] And it is the cartography

---

6 Ibid. p. 29.
7 Ibid. p. 60.
8 Hallward *Badiou* p. 12 (my emphasis); I would note in Hallward's comment not only the distancing of Badiou's subject from the Lacanian one but, precisely through the notion of consciousness, a drawing closer to Freire's.
9 Hallward, *Badiou*, p. 15.

drawn from this 'Lacanian passage' the one that we will be following when exploring the notion of noise-inside: the map that we will be carrying in our journey to the interiority of the subject will still be the one plotted by Lacan.

5.1. Anxiety at the Borders

I contend that if there is something like 'subjective noise' (which is not to be confused with the s*ubject to noise*), this is an *internalisation* of noise, its passing from the outside to the inside. Noise here is the background effect of the division of the subject, a murmur of the infinite regress of the signifying chain that happens when the Symbolic order, in the form of language, intends to grasp the whole of the Real—and fails. The remainder of this founding failed attempt to structure a Whole (a One), is noise—an inaugural Other. This big Other as subject is at first a locus: it *is* the Symbolic order per se 'the locus in which speech is constituted';[10] in this sense, Noise begins in a place of radical alterity to *subsequently* become a subject and thereby, as Lacan puts it, '"embody" the Other for another subject'.[11] Once again, this passage from place to temporality pertains to the concept of education that I am developing here.

The split itself *is the subject*: subjective noise is its effect (in other words, a remainder of a remainder). As we shall see, this figure of subjective (or internal) noise is related to Lacan's 'invocatory drive'—one of four 'partial drives' which manifest desire (itself undivided)—and which is specified in the partial 'object voice'.[12] My contention, then, is

---

10 Jacques Lacan, *The Seminar of Jacques Lacan: Book III, The Psychoses 1955-56*, ed. by Jacques-Alain Miller, trans. by Russell Grigg (New York: W. W. Norton & Company, 1993), p. 274.

11 Dylan Evans, *An Introductory Dictionary of Lacanian Psychoanalysis* (s.l.: Taylor & Francis e-Library, 2006), p. 136.

12 The other partial drives being the 'oral', 'anal' and 'scopic' drives, manifested respectively by the 'breast', 'feaces' and 'gaze' objects; see Evans, *Dictionary*, p. 48

that once *inside* the Subject, in order to make sense of its noise, we will need to examine the invocatory drive: the assistance here of Alain Didier-Weill (one of only very few thinkers within psychoanalysis who bothered to listen deeply to what the object voice has to say, or sing) will be invaluable.

Noise as affect

Noise and its affect on the senses seems to happen at precisely that hinge where the outside pivots to the inside, and where the turning up of a subject is inevitable. The subject (or, as we shall see, the possibility of a subject) begins in those sensuous primordial awakenings and invocations, driving the needs, demands and desires which will have determined, always already, the human subject.

So, what, or where is noise in this subjective inside? If there is a name for *the noise inside*, then it surely must be *anxiety*. Noise is the void of any situation involving the *senses*: we could say noise is an *affect* (and anxiety is at the heart of the psychoanalytic theory of affects)

The fact that 'we are all neurotic' is, in Norman O. Brown's view, the *pons asinorum* of psychoanalysis: 'Neurosis is not an occasional aberration; it is not just in other people; it is in us, and in us all the time'.[13]

Anxiety, as the affect of universal neurosis, is what relates all of mankind: 'the doctrine of the universal neurosis of mankind is the psychoanalytical analogue of the theological doctrine of original sin':[14] might it be that noise is the *only* relation in the sensible? We could indeed accept this by invoking something like a commutative property, should we take into account that, as Quentin Meillassoux reminds us, 'the

13 Norman O. Brown, *Life Against Death: The Psychoanalytical Meaning of History*, 2nd edn (Hanover, NH: Wesleyan University Press, 1985), p. 6.
14 Ibid.

sensible only exists as a *relation*'.[15]

5.2. The Invocatory Noise

Alain Didier-Weill opens his *Invocations* with a beautiful meditation which deeply resonates throughout the passages opened up by my investigation—including, quite astonishingly, the intrinsically Freirean theme of a 'vocation to become human':

> [t]he vocation to become human is, in its origin, transmitted to us by a voice that does not pass on the word to us without at the same time passing on its music: the music of that "maternal sonata" [*sonate maternelle*] is received by the nursling as a song that, right from the start, transmits a double vocation: do you hear the musical continuity of my vowels and the signifying discontinuity of my consonants? [*la discontinuité signifiante de mes consonnes?*].[16]

The term *sonate maternelle* Didier-Weill borrows from Pascal Quignard:

The sounds that the child hears are not born instantly at childbirth. Long before they can be emitters, children have been obeying the "maternal sonata"—or at least the unknowable sonata: preexisting, soprano, muted, warm, enveloping. Genealogically—at the limits of each man's genealogy—such obedience prolongs the *sexual attacca* of that procreating embrace. […] The corporeal and cardiac polyrhythm, then baying and respiratory, then hungry and crying, then motoric and babbling [*motrice et gazouillante*], then linguistic, is as much acquired as it seems spontaneous [*est autant acquise qu'elle semble spontanée*]: its rhythms are more mimetic and its learning more contagious than voluntarily triggered. Sound never quite manages to emancipate itself from the

---

15 Quentin Meillassoux, *After Finitude: An Essay on the Necessity of Contingency* (London & New York: Bloomsbury Academic, 2008), p. 2.

16 Alain Didier-Weill, *Invocations: Dionysos, Moïse*, saint Paul et Freud, (Paris: Calmann-Lévy, 1998), p. 11.

movement of a body that causes and amplifies it. Music will never completely dissociate itself from a dance that it rhythmically animates. In the same way, neither will ever be the hearing of sound separate from sexual intercourse, nor from "obedient" foetal training, nor from a filial linguistic bond [*De la même façon l'audition du sonore ne se sépare jamais du coït sexuel, ni de la formation «obédiente» fœtale, ni du lien filial linguistique*].[17]

It is important to note here Quignard's equation of *listening* and *obeying*: 'Hearing is obeying. The Latin word for listening is *obaudire*. *Obaudire* derived in the English form *obey*. An audition, an *audientia*, is an *obaudientia*: an obedience [*une obéissance*].'[18]

Could this notion of 'obedience' be a Quignard variation on the theme of 'invocation'? One thing to make clear at this point is that neither *invocation* in Lacan's— or, more precisely in Didier-Weill's—sense, nor *obedience*, in Quignard's sense, are the same as *interpellation* in either Althusser's or Adorno and Horkheimer's sense. For one, unlike Althusser's latter conception, invocation is clearly operational at a pre-mirror stage.

In any case, it is here where we find a first *filtering through*, an inaugural *infiltration* of the outside into the inside; the fact that its otherness is *retrospective* is of not little importance: music/noise will carry this recollective aspect all along:

- *penetrating, affecting, which is also perceiving,*

- *infiltrating, breaking into, intruding,*

- *pervasive and subversive*

The qualities of the aural are exactly equal to the qualities of the Hermetic: its

---

17 Pascal Quignard, *La Haine de la Musique* (Paris: Éditions Calmann-Lévy, 1996), p 109.
18 Ibid. p. 108.

intrusion, its always incomplete seal, its deficient insulation: '*il se trouve que les oreilles n'ont pas de paupières*': 'it turns out that the ears have no lids.'[19]

This is precisely the sense that connects it with the notion of the (infinite) subject: Badiou's passing from the human animal to the subject is operated by the possibility of the latter to encounter the (idea of) the infinite: 'it turns out that the infinity of passivity (the contrarian invisible reception) is founded in human listening.'[20]

'*There is no sealing of the self when encountering the sonorous*'[21]

We read in the Spanish edition of Quignard's work that 'there is no hermeticism under [against, in the face of, while encountering] the sonorous' [*no hay hermetismo ante lo sonoro*].[22] Pierre Jacomet's translation can be considered, from a common-usage point of view, perfectly valid. However, the notion of the hermetic that I am considering here aims to remain faithful to (what I want to believe is) a purer Hermes-world: consequently it conveys precisely the polar opposite sense: *everything under the sonorous is hermetic*.

That the sonorous is intrinsically *hermetic* is in essence the reason that leads Jacomet to use the term with an opposite sign (i.e. hermetic as self-enclosed, sealed, inaccessible). The original French of Quignard in this respect is less restrictive: *Il n'y a pas d'étanchéité de soi à l'égard du sonore* which I, not unclumsily, would render to English as 'there is no sealing of the self when encountering the sonorous'.

Hermetic as self-enclosed, hermetic as porous: translating 'hermetic' is impossible

---

19 Quignard, *La Haine de la Musique*, p. 105.
20 '*Il se trouve que l'infini de la passivité (la reception contrainte invisible) se fonde dans l'audition humaine*' (ibid. p. 108).
21 '*Il n'y a pas d'étanchéité de soi à l'égard du sonore*' (ibid. p 110).
22 Pascal Quignard, *El Odio A La Música: Diez pequeños tratados*, trans. by Pierre Jacomet (Santiago: Andrés Bello, 1998), p. 61.

without a paradoxical self-belonging: this is the result of the hermetic invocation. We find ourselves in the whirlpool of a noise-producing feedback loop which is typical of Hermes: the noise of translation, the noise of boundary laying and trespassing, of deceit and self-deceit. Furthermore, we are—most intriguingly—not far from the formal mathematical ontologisation of Shannon's communication theory: emitter, message, receiver, with noise as the immanent excess of the system: a leftover, a Serresian parasite, a Derridean *differánce*, a Lacanian *reste*, an undivisible remainder which—as Žižek enjoys reminding us—is also a *reminder*.[23]

---

23 See Slavoj Žižek, 'La Voz y la Diferencia Sexual', trans. by Nieves Soria, *La Voz*, ed. by Guillermo Raíces et. al. (Buenos Aires: EOL, 1997) pp. 47-70. This Spanish (authorised) version by Nieves Soria, published in *La voz, Colección Orientación Lacaniana, Serie Testimonios y Conferencias, Nº 2*, (Buenos Aires: EOL, 1997), is a translation of a French version by Élisabeth Doisneau which appeared in the *Revue de l'École de la Cause Freudienne* Nº 31, 'Le dire du sexe'. Raíces mentions in his introduction an original publication in English of Žižek's article which, to date, I have been unable to find (the copy referenced here is a pdf file uploaded to scribd.com, accessed 23 August 2018).

Part III

6. Language, Paleoanthropology & Play

7. Cadence: Humanisation, Noise, Relation, Education

6. Language, Paleoanthropology & Play

'The philosopher caught in the nets of language.' [1]

'As often happens, the invention consisted in turning a paradox into a concept' [2]

6.0. Intro: Subjects at the Threshold of Noise

The theme of Language has emerged in the two previous chapters, and it is now time to attempt the crossing of the 'narrow strait' [3] between the double hazards mentioned earlier, viz.:

- the over-reliance on language as subject-constructing

- the positing of something like the plenitude of humanisation

These two hazards have been encountered: on one side, the danger of positing a notion of subjectivity too reliant on language—something which will be inconsistent with Badiou's clear distancing from both analytical and post-structural reliances on language; on the other side, the danger of hypothesising a primordial event, an inaugural singularity, foundational of humanity—something which, for Badiou, inevitably leads to the ruin of thought, a disaster of ethics and to 'evil' tout court. [4]

---

1 Friedrich Nietzsche, *Philosophy and Truth: Selections from Nietzsche's Notebooks of the early 1870's*, ed. & trans. by Daniel Breazeale, (New Jersey & London: Humanities Press International, 1990) p. 42.
2 Badiou, BE p. 267.
3 Homer, *Odyssey* 12.234.
4 A notoriously sinister example would be National Socialism's naming of a *Volksdeutsche* and its recourse to an ancestral fatherland, soil, blood, race and so on.

As for the first hazard, far from subscribing to deconstructive, hermeneutic or analytical positions—all tributaries of a linguistic turn which aimed to collapse philosophical thought to language—the position I take here is to defend notions such as event, truth and subject, albeit without jettisoning language.

On one hand, as a matter of principle, I am following Badiou's assertion that there cannot be *only* 'bodies and languages', and adamantly support the idea that there must be some exception to the horizontality of voices and opinions, the name of which is 'truth'. More generally, I thereby join in the philosophical defence of concepts such as *truth* and *subject*, fully endorsing Zupančič's assertion that 'by simply abandoning' those notions 'we are abandoning the battlefield, rather than winning any significant battles.'[5]

However, I concurrently aim to hold the position that we cannot totally dispense with language if we are to keep operative a notion of truth and subject. Albeit, it is a notion of language as always already incomplete, as never *Whole* and one that allows, by being conscious of its own incompleteness, a *self-puncturing* that opens up the possibility of something hailing from outside to take its place within it. In this sense, language is both the condition of possibility of the subject, and the subject is the condition of possibility of language.[6]

The symptom of this capacity of language to self-puncture most clearly emerges in the operation of *metaphor*, wherein signified and signifier keep threatening to endlessly displace each other. Metaphor and metonym will always haunt what Sandino Núñez terms the 'semantic pact': the inevitable and necessary reification of sense (or, rather, of

---

5 Zupančič, 'Philosophy or Psychoanalysis? Yes, please!', p. 435.
6 This is the position taken, most clearly, by Sandino Núñez, and one which, with respect to the problem of language and its relation to philosophy and education, I am fully endorsing throughout this thesis. For Núñez, 'to completely renounce language is a loss', and his effort to re-situate language as a problem central to contemporary philosophy comes, not as a desire to 'subordinate philosophy to some presupposed science, or theory of language, but in order to put—once again—language *into* philosophy' (Núñez, *La Vieja Hembra Engañadora*, p. 10).

the void of sense) that makes the functioning of language possible.

The notion of language, if it is to function as a generic condition of the humanising operator in education, must be able to contain such paradoxical self-belonging and reflexivity, allowing for the possibility of reaching its own limits and point of breakdown. It is precisely this point which, Núñez argues, allows for *critique* to happen (and without which there is no possibility for the functioning of anything like politics, art, science, love—no capacity for truth, tout court).

> The semantic pact is not established once and for all: it is condemned to be open, damaged or punctured. And this is because metaphor (representation, or signification) always exposes the excess or the lack. And *because* metaphor is, sooner or later, a usurpation, an illegitimacy or an inconsistency, the referential pact—reality itself—is always vulnerable to the analytical potency of language. The excess or the lack is a breach wherein critique penetrates and proceeds. Because in order for language to be language, sense (this or that historical sense, ideology, metaphor, ontology and whole semantic pact of an epoch or a culture) has to allow itself to be problematised, revised, modified, displaced. In sum, *critiqued*. Language is that infinite capacity to problematise its own finite senses.[7]

The subject proposed by Núñez is a subject 'at the edge of language',[8] an idea which which carries echoes of the Badiouian subject operating 'at the edge of the void'. From the perspective taken throughout this thesis, I will refer to this subject, 'able to bear, support, and operate a critical truth'[9] as a subject operating *at the threshold of noise*.

Most importantly, this idea of critique *as made possible* by the void, or rather, by its manifestation as a noise always already biasing language and dialogue, will have provided with a new meaning to the *critical* part in the epithet *Critical Education*—

---

7 Núñez, *La Vieja Hembra Engañadora*, p. 23.
8 Ibid. p. 15
9 Ibid. p. 25

reinvigorating an adjectival function which by now has become slightly tired and instrumentalised.[10]

Language has no history

As for the second hazard that the pedagogical leg of the journey has encountered (viz., the positing of some sort of "event of events", which would in effect substantialise something like the ultimate truth of humanity), a safe passage through it requires careful navigation. For Badiou, such sense of plenitude, which would complete a truth and essentialise its body, is a position implying that an event, rather than situating, or glimpsing the void as the inconsistent nothingness around which every situation structures itself, is the substantialisation of some transcendental wholeness, made present and explicit as it acquires its full definitive potential. For Badiou,

> [w]hat allows a genuine event to be at the origin of a truth—which is the only thing that can be for all, and can be eternally—is precisely the fact that it relates to the particularity of a situation only from the bias of its void. The void, the multiple-of-nothing, neither excludes nor constrains anyone. It is the absolute neutrality of being—such that the fidelity that originates in an event, although it is an immanent break within a singular situation, is none the less universally addressed.[11]

What can be said, in this respect, about humanisation as *event*? What can be said about the emergence of language as *condition*? In order to explore these questions further, we

---

10 Freire himself, by the end of the 80s, was publicly expressing his disquiet towards the instrumentalisation and methodolisation of his work; see for example Paulo Freire & Ira Shor, 'What is the "Dialogical Method" of Teaching?', *Journal of education* 169:3 (1987), pp. 11-31; for an insightful commentary on the appropriation of Freirean concepts, see Thomas Archibald & Arthur L. Wilson, 'Rethinking Empowerment: Theories of Power and the Potential for Emancipatory Praxis', *Adult Education Research Conference* <http://newprairiepress.org/aerc/2011/papers/3> [accss.. 22 Oct. 2013].
11 Badiou, E p. 73.

might have to venture into the perilous waters of paleoanthropological science. Let us begin by setting foot on a pair of statements which, albeit not universally agreed upon, are undoubtedly, not only scientifically sound, but hypotheses worthy of interest:

(1) Paleoanthropological evidence has shown that anthropogenesis—and, therefore, language—is an emergence *subtracted from biology* (i.e. it is not simply a result of a genetic mutation: recent research points to a temporal delay between the appearances of the early modern human's language-ready physiological apparatus and symbolic thought of around 100-120k years).[12]

(2) Insofar as there is no possibility of identifying either a specific place or exact moment for the appearance of language (as Chomsky often points out, it does not leave fossil traces), it is indeed the case that language is an invention which will have remained generic, abstract and lacking in any 'identifiable localisation and temporality', as Norman Madarasz has already observed.[13]

The effect—or, rather, the *a*ffect—of the un-identifiable, un-localisable temporality of the anthropogenic event has been appealingly depicted by Agamben as a field of forces always already shaping the human unconsciousness, something like an anthropic background radiation, emitting its surplus noise throughout and beyond history; 'it is clear', for Agamben, that

---

12 '[E]vidence suggests that the appearance of symbolic thought, our most accurate proxy for language, was a recent evolutionary event. For instance, the first evidence of putatively symbolic artifacts dates back to only around 100,000 years ago, significantly after the appearance on the planet of anatomically distinctive Homo sapiens around 200,000 years ago' (Johan J. Bolhuis et al., 'How Could Language Have Evolved?', *PLoS Biol* 12:8 (August 2014), pp. 1-6 (p. 3), doi.org/10.1371/journal.pbio.1001934).

13 Norman Madarasz, 'O "sujeito científico" no sistema filosófico de A. Badiou: o caso da biolinguística chomskyana', *Veritas* 61:3, (Sep-Dec. 2016), pp. 466-491 (p 482). Madarasz, following Chomsky, still uses the term 'mutation'—albeit in not a completely biological sense: '*[n]ão obstante o sentido específico deste termo, sua generalidade, abstração e falta de localização e temporalidade identificáveis, fariam desta "mutação" algo, por definição, da ordem de um acontecimento na ontologia do sujeito genérico de Alain Badiou.*' (ibid).

the *arché* toward which an archaeology seeks to regress cannot be understood in any way as a given that can be situated either in a chronology (even in a broad category like "prehistoric") or even beyond it, in an atemporal metahistorical structure (for example, as Dumézil ironically suggests, in the neuronal system of a hominid). It is, rather, a force working in history, exactly as the Indo-European language expresses first of all a system of connections among historically accessible languages; just as the child in psychoanalysis expresses a force that continues to act in the psychic life of the adult; and just as the "big bang," which is supposed to have given rise to the universe, is something that never stops transmitting its background radiation to us. Yet unlike the "big bang," which astrophysicists claim to be able to date, even if only in terms of millions of years, the *arché is* not a given, a substance, or an event but a field of historical currents stretched between anthropogenesis and the present, ultrahistory and history. And as such—that is, insofar as, like anthropogenesis, it is something that is necessarily presupposed as having happened but that cannot be hypostatized into an event in a chronology—it can eventually render historical phenomena intelligible.[14]

This leftover echo, this force conditioning history is, in and of itself, the symbolic order—language, tout court. And as a *condition* of history, it is somehow, appropriately *unsutured* from it. Which implies that language itself has no history: it is, hence, eternal. This of course is a direct adoption of Althusser's own appropriation of Freud's proposition that 'the *unconscious is eternal*, i.e. that it has no history.' Considering that 'eternal means, not transcendent to all (temporal) history, but omnipresent, trans-historical and therefore immutable in form throughout the extent of history,' I shall here transitively adapt Althusser-Freud's expression word for word and write: *language is eternal*, exactly like ideology (which is eternal exactly like the unconscious). I find the comparison theoretically justified by the fact that the eternity of ideology (which is that

---

14 Giorgio Agamben, *The Sacrament of Language: An Archaeology of the Oath* (2008), trans. by Adam Kotsko (Stanford, CA: Stanford University Press, 2011), pp. 10-11.

of the unconscious) is not unrelated to the eternity of language in general[15] (i.e. the subtractive, generic notion of language I am deploying here).

Admittedly, we are unable to place the event of humanisation in any particular point of a chronology. As Lévi-Strauss, Lacan, Žižek et al. have noted, once the symbolic order appears, it makes it as if it has always been there. Nonetheless, one thing that paleoanthropological and biolinguistic science seem to have established is that anthropogenesis does *not* belong exclusively to biology.

All of which, passed through a Badouian coarsing, translates as: humanisation is *not* an element of Nature. Can we therefore assert that it is a *Historical* site? After all, as we shall shortly see, science has marked the distinction between *anatomically modern humans* (amh) and *behavioral modern humans* (bhm): one might be tempted to see this as an anthropological endowment to Badiou's own philosophical (or, rather, ethical) distinction between the *human animal* and the *human subject*. Evidently, though, the bhm is not *necessarily* a subject in the Badiouian sense of the term (as we already know, Badiou's subject is not a given). However, the (ultra)historical appearance of bhm—its minimal difference with amh—configures the inaugural *site* wherein the emergence of a subject becomes *possible for the first time*.

Throughout this exploration, then, I seek to find an axial zone where language separates the *possibility* of a subject, whilst keeping in mind that such a place, whilst necessary, *is not enough*: for a subject to grow in it, some work remains to be done. Language simply prepares the ground for the subject by always leaving a noise-producing remainder, a

---

15 Louis Althusser, *On Ideology*, trans. by Ben Brewster (London & New York: Verso, 2008), p 35. Althusser's exact words are: 'I shall adopt Freud's expression word for word, and write ideology is eternal, exactly like the unconscious. And I add that I find this comparison theoretically justified by the fact that the eternity of the unconscious is not unrelated to the eternity of ideology in general.'

left-over of the Real, a void of *anxiety*—in other words, language *conditions* an eventual site. For a subject to emerge, first of all something *must happen*, and then something must account for the consequences of that happening.

The point to be made is: *humanisation does not guarantee a subject*. Neither is anxiety, in itself, enough to secure the trajectory of the subject: this anxiety, this noise-inside which is both cause and effect of the subjective work, requires the ethical modulation provided by an education by truths. What must be kept in mind all along, Ruda reminds us, is that 'the subject is a process, it is not a point', implying that the subject must never be confused with the void-as-unlocalisable-point—or, in the terms I using here, with *noise* itself: '[*t*]*he void is not the subject, the subject is not the void* […]. More precisely: the subject is void but it is not *the* void. […] To put it in a formula: there is the void and there is a process voidening the situation which is the subject.'[16]

The subject is not noise: it is a process which renders the situation *noisy* in the investigation of a truth. And education is at the service of such process.

Lacan's cartography of the subject

From this perspective, then, the Lacanian subject appears to be too dependant on language. In the sense discussed here, Lacan does not provide room for either truths or for the event (hence his clear positioning as an 'anti-philosopher'): 'What Lacan still owed to Descartes, a debt whose account must be closed, was the idea that there were always some subjects'.[17] Much to the contrary, for Badiou the subject is rare. And they are so precisely because they are subjects of truth—and a truth, as we know, depends on

16 Ruda, *For Badiou*, pp. 98, 179 n.62 (emphasis in the original).
17 Badiou, BE p. 434.

the occurrence of an event, viz., on the subject's accidental *brush with the Real*, which ignites their transformation and subsequent militance. This possibility of the real to *grace* the subject is 'what distinguishes Badiou's subjective or activist conception of the real from Lacan's ultimately more structural or passive conception'.[18]

For Lacan, the real will always already remain unreachable to his subject of the unconscious. On the other hand, as Hallward notes, 'Badiou's most basic article of faith' is that 'truly autonomous subjective action, if founded only on an event, can indeed touch its own real—which is to say, can achieve the impossible'.[19] Furthermore, I will take here the position that, as Bruno Bosteels argues, a situation can only be changed starting from what is, precisely, its impossible point: it is only there and then that the subject might be able to exert a 'torsion on the impossibility of this impossible', and force into the real of the situation a new universal law.[20] So if Badiou needs 'to move beyond Lacan', Hallward continues, 'it is mainly because the psychoanalyst remains committed to the structural sufficiency of language or the symbolic (however disruptive its impact upon the imaginary ego), rather than open to the rare, contingent universality of the event'.[21]

With this is mind, I will recapitulate the safeguards mentioned in chapter 2 regarding the consistency of the subject with respect to its passage through the domains of education:

(1) they are a subject *made possible* by language

(2) there needs to be an *outside* of the language

---

18 Hallward, *Badiou*, p. 15.
19 Ibid.
20 Bruno Bosteels, 'Por una falta de política: Tésis sobre la filosofía de la democracia radical', *Acontecimiento* 17 (1999) <http://grupoacontecimiento.com.ar> [accss. 5 Apr 2013].
21 Hallward, *Badiou*, p. 354 n. 48; c.f. Badiou, BE p. 434.

(3) a truth is the forcing of this outside into the language

(4) education is purely at the service of such forcing.

And, finally, education is able to be at the service of this forcing because, as Ruda points out, it produces (or rather, cares for) a generic subject conditioned by all of the four procedures. If so, this can only be achieved by what Clemens argues is the condition of conditions of philosophy: viz., the *letter*. Such has to be the notion of language as condition of conditions: one that operates as close as possible to the letter, conditioning the educational work of the most generic subject possible.[22]

Granted, language might not be the horizon of philosophy, as Badiou fiercely argues:[23] what might be posited instead is that, as a physico-phenomeno-logical appearance of the letter-matheme, as *schizducer* of the void into noise, language becomes the event horizon of *transmissability* per se.

$$(\varnothing) \quad \longrightarrow \quad (\eta)$$

philosophy   <=>   education

letter   —>   language

condition of conditions   —>   event-horizon

6.1. Humanisation and Science

---

22 And, moreover—considering we are still in scientific waters—one might point out to an emergent resonance: if the letter is essentially mathematical, could we not find here a link between Chomsky's innate capacity for language and Stanilas Dehaene's 'number sense'? See Stanislas Dehaene, *The Number Sense: How the Mind Crates Mathematics* (Oxford & New York: Oxford University Press, 1997)

23 '[L]anguage is not the absolute horizon of thought' (IT p. 50).

My contention is that Badiou, Chomsky and Freire are thinking the same event, but composing it *discursively* in three different philosophical dialects. Badiou describes it from the perspective of his (immanently philosophical) subtractive ontology of multiplicity; Chomsky, surveys its site from his (immanently empirical) biolinguistic outlook; in Freire—as already mentioned—taking the name 'humanisation', it instigates the operation of his (immanently praxial) construction of subjectivity. The *topos* of the odd trio's meeting is one that Norman Madarasz regards as the possible (evental) site of a new scientific paradigm shift, in the Kuhnian sense of the term.

Madarasz's latest work—groundbreaking, in many respects—manages to convincingly stage a unique conversation between Badiou and Chomsky: in a move that follows through the consequences implied in accepting Chomsky's 'faculty of language' (FL) as innate, universal and immanently human,[24] wherein 'linguistic capacity joins in the production and creation of identity', Madarasz points to the emergence of an 'ontological axis' which 'singularly encompasses the question of a coherence between [Badiou's] subjective *genericity* and [Chomsky's] linguistic *generativity*, understood as identity-forming processes';[25] Madarasz concludes that 'Chomskyan biolinguisitics is a scientific theory which appertains to a radical model of specific subjectivation, and is relative to what Badiou denominates the "scientific condition" of philosophy'.[26] For Chomsky, FL is nothing else than a result of a genetic mutation: what he terms the 'Basic Property' refers to the 'genetic endowment that underlies the faculty of

---

24 'The faculty of language is a true species property, invariant among human groups, and unique to humans in its essential properties' (Noam Chomsky, 'The Galilean Challenge', *Inference* 3:1 (2017), <https://inference-review.com/article/the-galilean-challenge> [accss. 24 Apr 2017], para. 20).
25 Madarasz, 'O "sujeito científico"', pp 466, 468.
26 Ibid. p. 468.

language'.[27] In spite of this, and pace Badiou's immanently mathematical, *contra*-biological ontology, Madarasz maintains that 'the specific sense of this term [genetic mutation], its generality, abstraction and lack of identifiable localisation and temporality, would make of this "mutation", by definition, something of the order of an event in Alain Badiou's ontology of the generic subject'.[28]

Madarasz has successfully managed to show that Chomsky and Badiou can converse by meeting in a structural common ground, bounded by the generativity of language in the former and 'the generic' as its scientific inscription in the latter. I propose that it is possible to go further and observe that the bracketing of the void in Badiou's ontology is structurally isomorphic with Chomsky's labeled bracketing of the surface structures of language.

So, pace themselves, Chomsky and Badiou might be made to sit at the same philosophical table. My intention here is to introduce Freire into the conversation: I contend that the latter's fidelity to the subject-constructing aspect of generic humanisation, provides a necessary praxial, inevitably temporal and purely educational dimension to Badiou's 'subjective genericity' and Chomsky's 'linguistic generativity'.

Badiou's void, Chomsky's feedback-causing 'recursion' and Freire's 'unfinishedness' will ensure that the murmur of noise will not be allowed to fade out during the conversation.

Freire with Chomsky

If, for Heidegger, it is at the crossroads of language and *Eirignis* as 'the historical destiny

---

27 Noam Chomsky (interviewed by C. J. Polychroniou), 'On the Evolution of Language: A Biolinguistic Perspective' (24 Sept. 2016) <https://chomsky.info/on-the-evolution-of-language-a-biolinguistic-perspective/> [accss. 2 Jul 17].
28 Madarasz, 'O "sujeito científico"', p. 482.

of mortals',[29] where science and thought part ways,[30] the direction taken here—signposted by Chomsky and the latest paleoanthropological evidence—is the exact opposite. 'We have observed', Chomsky asserts, 'that the study of the creative aspect of language use develops from the assumption that linguistic and mental processes are virtually identical, language providing the primary means for free expression of thought and feeling, as well as for the functioning of the creative imagination.'[31]

So, whereas Heidegger forecloses science as the proper interlocutor able to answer the question "what is called thinking?" (in a sense of "what calls for thinking?" viz., what *summons*, *demands* or *directs* human beings to think),[32] it is precisely here that Chomsky places the heart of his biolinguistic project: for the latter, the answer to Heidegger's question should be sought for, and will be found in, the realms of genetics and the evolutionary biology of the human brain. For Chomsky, the faculty of language is a contingent emergence of a 'genetically endowed' capacity, tout court.

> An elementary fact about the language faculty is that it is a system of discrete infinity, rare in the organic world. Any such system is based on a primitive operation that takes objects already constructed, and constructs from them a new object: in the simplest case, the set containing them. Call that operation Merge. Either Merge or some equivalent is a minimal requirement. With Merge available, we instantly have an unbounded system of hierarchically structured expressions. The simplest account of the "Great Leap Forward" in the evolution of humans would be that the brain was rewired, perhaps by some slight mutation, to provide the operation Merge, at once laying a core part of the basis for what is found at that dramatic moment of human evolution: at least in principle; to connect the dots is far from a trivial problem. There are speculations about

---

29 Heidegger, *Basic Writings* p. 396.
30 'Science in itself does not think' (ibid. p. 373).
31 Noam Chomsky, *Cartesian Linguistics: A Chapter in the History of Rationalist Thought*, 3rd edn (Cambridge: Cambridge University Press, 2009), p. 78.
32 Heidegger, *Basic Writings*, pp. 385-86.

the evolution of language that postulate a far more complex process: first some mutation that permits two-unit expressions, perhaps yielding selectional advantage by reducing memory load for lexical items; then further mutations to permit larger ones; and finally the Great Leap that yields Merge.[33]

Merge, paradox, truth: set-theory ontology and structural linguistics

Chomsky's Minimalist Program (MP) then functions on the basis of a single linguistic operation: *Merge*. Described by Berwick and Chomsky as 'the simplest possible mode of recursive generation',[34] Merge takes two already existing syntactic elements X and Y and combines them in an unordered pair $\{X, Y\}$ to form a new syntactic object. It is a thought-operation which, being recursive, can be iterated indefinitely: 'Merge, iterated without bound, yields an infinity of hierarchically constructed expressions. If these can be interpreted by conceptual systems, the operation provides an internal language of thought.'[35]

This internal 'language of thought'—both the trigger and the symptomatic signal of the event of humanisation—is, in Chomsky et al.'s biolinguistic perspective, carrying two crucial notions: (1) language-thought, in its iterative operation, presents the cogitant subject with something like *the vertigo of an actual infinite* (2) being recursive and hence self-referential, it impregnates the situation with *the hazard of paradox*.

The main point to underline here is that Chomsky's MP—which, I will note here in passing, its minimalism is not at complete odds with Badiou's subtractiveness—

---

33 Noam Chomsky, 'Biolinguistics and the Human Capacity', *Language and Mind*, 3rd edn (Cambridge, MA: MIT Press, 2005) pp. 173-85 (pp. 183-4).

34 Robert C. Berwick & Noam Chomsky, 'The Biolinguistic Program: The Current State of its Development', *The Biolinguistic Enterprise: New Perspectives on the Evolution and Nature of the Human Language Faculty*, ed. by Anna Maria Di Sciullo & Cedric Boeckx (Oxford: Oxford University Press, 2011) pp. 19-41 (p. 30).

35 Ibid.

though not equivalent to set theory, is clearly shaped by set-theoretical notions: 'in its simplest terms, the Merge operation is just set formation'.[36] Indeed, in an exemplification which could only be described as the linguistic operation of the axiom of power-set and pairing, Berwick and Chomsky write that '[g]iven a syntactic object X (either a word-like atom or something that is itself a product of Merge) and another syntactic object Y, Merge forms a new, hierarchically structured object as the set {X, Y} […]. For example, given *read* and *books*, Merge combines these into {*read*, *books*}'[37] all of which would provide the syntactic structure for the verb phrase (VP) "read books".

Merge then, is the basic operation within Chomsky's MP, and, as noted above, is akin to something like an internal, cogitant set-formation. Most significantly though, is the fact that Merge has the property of *recursion*, meaning that it can apply itself to its own output. It can *merge* elements that are themselves formed by Merge (formally, in set theory the operation of sub-set formation, axiomatically legitimised by the powerset axiom). It is this recursive property of Merge that will have provided language with its unique cognitive trait.

It is with Merge that the murmur of noise-inside begins. Its recursive property is that which endows language with the capacity to condition, by itself, the process of humanisation.

Recursion

36 Robert C. Berwick & Noam Chomsky, *Why Only Us: Language and Evolution* (Cambridge, MA: MIT Press, 2016) p. 10; c.f. 'Merge builds hierarchically structured expressions as sets' (p. 119); 'the representations in the original formulations of transformational grammar, were set-theoretic, not graph-theoretic: trees are simply a pedagogical aid. Recall that the Basic Property also constructs sets' (*Why Only Us*, p. 135); see also: Noam Chomsky, *The Minimalist Program: 20th Anniversary Edition* (Cambridge, MA: MIT Press, 2015), pp. 207-08; Bolhuis et al., 'How Could Language Have Evolved?', pp. 1-2 and Berwick & Chomsky, 'The Biolinguistic Program', pp. 19-41.
37 Berwick & Chomsky, *Why Only Us*, p. 10.

Chomsky's Universal Grammar (UG) rests on the hypothesis of an innate, structurally pre-wired faculty of language (FL) unique to the human species. In an article published in 2002, Chomsky and his collaborators introduced a distinction, whereby 'faculty of language (FL) now distinguished between FL in the broad sense (FLB) and FL in the narrow sense (FLN).'[38] Significantly, though, if FLB includes the sensory-motor system, the conceptual-intentional system, and all the computational mechanisms for recursion, FLN is subtractively identified solely with recursion. Furthermore, and crucially, recursion becomes the distinctive identifier of the human singularity: '[w]e hypothesize that FLN *only includes recursion and is the only uniquely human component of the faculty of language*'.[39] Moreover, Chomsky et al. further argue that 'FLN may have evolved for reasons other than language, hence comparative studies might look for evidence of such computations outside of the domain of communication (for example, number, navigation, and social relations).'[40]

Nature, it seems, even for the ultra-empiricist Chomsky, has played no part in the event. And it is precisely at this point where Badiou's mathematical ontology might begin to resonate.

There is neither Nature nor communication—however, there is in place the capability of both Merge (i.e. *set formation*) *and* recurrence (i.e. *paradox*). How can this thought-process be formalised? In true Badiouian manner, *we have to start with nothing*.

The absolutely initial point that assures the chain of ordinals of its being is the empty set

$\varnothing$, decided axiomatically as secularised form, or number-form, of Nothingness. This

38 Marc D. Hauser, Noam Chomsky & W. Tecumseh Fitch, 'The Faculty of Language: What Is It, Who Has It, and How Did It Evolve?', *Science* 298:5598 (22 Nov 2002), pp. 1569-1579 (p. 1569).
39 Ibid.
40 Ibid.

form is nothing other than the situation-name of being qua being, the suture of every situation-being, and of every language, to their latent being. The empty set being an ordinal, and therefore a natural multiple, we might say: the point of being of every situation is natural. Materialism is founded upon this statement.[41]

In other words, the empty set, a set of nothing, exists—nothingness *is*: this is crucial, as it presents us with the ontological schema of something like the inaugural situation of thought (viz., humanisation): we start with nothing. But if $\varnothing$ exists, then, by the power-set axiom, the singleton of $\varnothing$, written $\{\varnothing\}$, necessarily follows (i.e. the subset which *includes* $\varnothing$: or, *the singleton of the void,* an ontological figure for the One); but then, continuing the recursive operation, thought generates $\{\varnothing, \{\varnothing\}\}$ (ontologically, the ordinal number 2) and so on, *ad infinitum*: in other words, Chomsky's recursion in full operation.

What is more, in Badiou, the principle of recurrence does not only operate the counting of the succession of ordinals (which is no more than the counting of Nature): for Badiou, recursion is the motor of what he terms 'transfinite induction', the crucial operation that enables thought to access the infinite.

> 10.13. Reasoning by recurrence combines one verification and the demonstration of one implication. Once in possession of these two moments, the structure proper to the ordinals authorises the universal conclusion.
>
> 10.16. Reasoning by recurrence is a proof-procedure for universal statements concerning ordinals. It allows us to conclude. But there is a more important usage of recurrence, or of transfinite induction, one which allows us to *attain the concept*. This is *inductive definition*.[42]

---

41 Alain Badiou, *Number and Numbers*, trans. by Robin Mackay (Cambridge: Polity Press, 2008), p. 83.
42 Badiou, *Number and Numbers*, p. 89.

Therefore, transfinite induction is a proof-mechanism that (tress)passes from level to level (starting with the void, then ordinal numbers, then transfinite numbers, etc...) thus allowing access to the infinite, whilst concurrently never having to define the *All*.

Thus we will have at our disposal not just a single concept P, but an infinite and infinitely ramified family of concepts, from P_0, explicitly defined, up to the more considerable ordinal indexations P_w, passing through P_n, P_w, P_{w+n}, etc. We will then be able to say that concept P, as unique concept, is *defined by transfinite induction*, in the following sense: for a given *x*, $P(x)$ will be true if and only if there exists an ordinal W such that *x* possesses the property at level W. We would have the following equivalence:

$P(x)$ <—> "there exists a W such that P_w (*x*)".

So the inductive mastery of the concept passes by way of its ordinal ramification, and by way of the equivalence between "the concept P holds for *x*" and "the concept P holds for *x at level W of that concept*". This equivalence *avoids all mentioning of the All*. It tests the property P not "in general", but on *one* level, thus freeing it from paradoxes of inconsistency.[43]

And, furthermore, as Miller explains, this inductive recurrence results in a self-reflective cogitation which, sutured to an initial lack (the starting nothingness, symbolised by 0), begins its metonymic movement inside the subject-to-be.

Certainly, if the 1 of *n* + 1 is nothing other than the counting of the zero, the function of addition of the sign + is superfatory [*superfétatoire*], and we must restore to the horizontal representation of the engendering its verticality: the 1 is to be taken as the primary

---

43 Badiou, *Number and Numbers*, p. 90.

symbol of the emergence of lack in the field of truth, and the sign + indicates the crossing, the transgression through which the 0 lack comes to be represented as 1, producing, through this difference of *n* to *n*' which you have seen to be an effect of meaning, the name of a number'. [...] [I]f the series of numbers, metonymy of the zero, begins with its metaphor, if the 0 member of the series as number is only the standing-in-place suturing the absence (of the absolute zero) which moves beneath the chain according to the alternation of a representation and an exclusion—then what is there to stop us from seeing in the restored relation of the zero to the series of numbers the most elementary articulation of the subject's relation to the signifying chain?'[44]

Undecidability, declaration and the pathologies of language

We could say that *all* of the above presents us, not with an event, but with an eventual *site*. Or, to be more precise, with an *arch*-eventual site. The subject—never given—has not yet emerged. There is, however, a mere possibility. Recursion brings with it the possibility of paradox, and paradox brings with it *undecidability*: undecidability is triggered by a supplementation, by the +1 brought by an unpredictable event. And in order for a subject to emerge as a consequence of said event, a *decision* is required: 'a truth's first step is to wager on this supplement.'[45]

What all of this is implying is that the recursive operation of Merge (as we just saw, none other than the operation, within structural linguistics, of the power-set axiom), *needs to be interrupted*: 'in order for the process of a truth to begin, something must happen'.[46]

---

44 Jacques-Alain Miller, 'Suture (Elements of the Logic of the Signifier)', trans. by Jacqueline Rose <http://cahiers.kingston.ac.uk/pdf/cpa1.3.miller.translation.pdf>[accss. 10 Oct. 2012]; first published as 'La Suture (Éléments de la logique du signifiant)', *Cahiers pour l'Analyse* 1.3 (January 1966), pp. 37-49.
45 Badiou, TW p. 112.
46 Badiou, TW p. 111.

Merge prescribes a *structure*: in Chomskyan linguistics, syntax (communication) derives from the hardwired structure of FL, operated by Merge. And for Badiou, structure implies place and repetition: that 'something' that needs to happen in order for the process of a truth to begin (in order for a subject to emerge from this structure), is no more than an *interruption* of the repetition dictated by structure: 'a truth interrupts repetition'.[47]

And one might speculate that the first, inaugural arch-site of such possible truth(s), the first proper, paradoxical, interruption of Merge, can only be opened and operated *in* and *by* a subjective, self-reflective *utterance*. In fact this inaugural affirmation is unabashedly named by Agamben as 'the event of language'.[48] For Agamben, such event—which indexes nothing less than the (philosophical) inauguration of *being* and *ousia*—can only take place within the sphere of what Benveniste calls the 'utterance' [*l'énonciation*], which, as we saw earlier, is every speech act which configures the *I* as *the subject of enunciation.*[49] Linguistics, in Agamben's view, defines this dimension merely 'as the putting into action of language and the conversion of *langue* into *parole.*' On the other hand, throughout the history of Western philosophy—from Aristotle, through Aquinas to Heidegger—'[t]hat which is always already demonstrated in every act of speaking, […] that which is always already indicated in speech without being named, is, for philosophy, being.' For Agamben, the history of metaphysics, 'coincides with the taking place of language': metaphysics, therefore, is an 'experience of language [that] in every speech act, grasps the disclosure of that dimension, and in all speech, experiences above

---

47 Badiou, TW p. 112.

48 Agamben and Badiou's notions of "event" are, of course, unalike: in strictly Badiouian terms, one cannot speak of "the event of language". And so to repeat once again: in the Badiouian/Freirean framework postulated here, language functions as the condition-of-conditions of the generic subject-of-subjects produced by the always unfinished process of humanisation, the philosophical name of which is education.

49 Benveniste, *Problems in General Linguistics*, p. 225.

all the "marvel" that language exists.' And, most crucially, Agamben unambiguously points towards language's self-referencing capacity as conditioning the production of a (transcendental) subject:

> [o]nly because language permits a reference to its own instance through *shifters*, something like being and the world are open to speculation. The transcendence of being and of the world—which medieval logic grasped under the rubric of the *transcendentia* and which Heidegger identifies as the fundamental structure of being-in-the-world—is the transcendence of the event of language with respect to that which, in this event, is said and signified; and the shifters, which indicate the pure *instance* of discourse, constitute (as Kant understood perfectly, attributing transcendental status to the I) the originary linguistic structure of transcendence.[50]

If such emphasis on transcendence does not sit very comfortably within a Badiouian configuration—this is one of many bifurcation points in Badiou and Agamben's philosophies—the notion of language as a self-transcendent act of interruption, does. Indeed, insofar as it belongs (i.e. it is immanent) to the evental site wherein humanisation-as-interruption happens, language *must* already carry within it the seed of such interruption. This seed is, itself, language's immanent symptom: *shifters*, metaphor, self-reflection, recursion, paradox—all somewhat pathological traits of the always incomplete attempt to make an *out-of-joint sense* of what is none other than the left-over noise of an ontological void, which, carried out of ontology, now murmurs in

---

50 Giorgio Agamben, *Language and Death: The Place of Negativity*, trans. by Karen E. Pinkus with Michael Hardt (Minneapolis, MN: University of Minnesota Press, 2006), pp. 25-6. As for the essential notion of 'shifters', Lacan writes that 'Roman Jakobson borrows this term from Jespersen to designate those words in the code that take on meaning only from the coordinates (attribution, date, and place of emission) of the message. According to Pierce's classification, they are "index-symbols." Personal pronouns are the best example: the difficulties involved in their acquisition and their functional deficiencies illustrate the problematic generated by these signifiers in the subject.' Jacques Lacan, *Ecrits*, p. 485 n.1; see also Roman Jakobson, *Selected Writings II: Word and Language*, (The Hague: Mouton, 1971), 'Shifters, Verbal Categories, and the Russian Verb', pp. 130-47.

the temporal, relational dialectic of entropy and negentropy produced in the workplace (or, rather, in the work*time*) of the humanisation process.

6.2. Paleoanthropological Humanism

The paleoanthropological condition

As for the above mentioned "paleoanthropological evidence" supporting the claim that the anthropogenic event is more historical than biological, this is betokened here mostly by the seminal work of Ian Tattersall which, together with the momentous archeological discoveries by Christopher Henshilwood in South Africa during the early 90s (and the subsequent publication of the findings in collaboration with Francesco d'Errico and others), comprise what can be described as the key "paleoanthropological conditioning" of my argument.

Tattersall is '[o]ne of the leading scientists studying human evolution',[51] in Chomsky's opinion (and with whom he has recently collaborated on a number of papers on the evolution of language).[52] His latest research has shown that the emergence of symbolic thought, around 80 thousand years ago (kya), was neither a direct consequence of the biological changes happening in anatomically modern humans around 200 kya (larger brain, descended larynx and so on), nor were these mutations "adaptations" modulated by some linear evolution of language. On the contrary, every genetic modification that enabled the invention of language, had already been in place for thousands of years

[51] Noam Chomsky, *What Kind of Creatures Are We?*, (New York: Columbia University Press, 2016) p. 3. This text is the transcript of the "Dewey Lectures" delivered by Chomsky at Columbia University in the Fall of 2013, originally published in *The Journal of Philosophy*, CX:12 (Dec. 2013), pp. 645-700.
[52] See, for example, Bolhuis et al., 'How Could Language Have Evolved?'.

before the appearance of symbolic thought, marking the distinction between *anatomically modern humans* (amh) and *behavioral modern humans* (bhm). The *appearance* of symbolic thought—riding on the invention of language—with respect to the *capacity* for thought—a result of genetic exaptations—had a delay of around 120 thousand years.[53]

> The change over of *Homo sapiens* from a nonsymbolic, nonlinguistic species to a symbolic, linguistic one, is the most mind-boggling cognitive transformation that has ever happened to any organism. […] It is conceivable that the functionally important role of language as an interior conduit to thought was paramount from the beginning. But language as a means of communication would most easily and rapidly have spread through a population that possessed the necessary biology—and ultimately beyond that small or original population, throughout a biologically predisposed species whose newfound intellect soon allowed it to take over the world.[54]

The evidence

There are three paleoanthropological facts that need to be considered.

(1) humans who *looked* exactly like us (i.e. anatomically modern humans) were

---

53 Give or take a few thousand years—negligible in evolutionary times—Kate Wong's datings do not seem to contradict Tattersall's: 'Humans who looked like us had evolved by 195,000 years ago, as evidenced by Homo sapiens fossils from the site of Omo Kibish in Ethiopia. But received archaeological wisdom holds that humans did not begin behaving like us until nearly 150,000 years later. That notion stems largely from cultural remains uncovered in Europe, where art, ritual, technological advances and other indications of modern thinking flowered spectacularly and suddenly after about 40,000 years ago, around the time that anatomically modern humans started colonizing Europe'. Kate Wong, 'The Morning of the Human Mind', *Scientific American, Special Edition: Becoming Human: Evolution and the Rise of Intelligence* 16:2 (2006), pp. 74-83 (p. 78). It must be added that in this article Wong presents alternative theories which question the 'archeological received wisdom' of a delay between the biological and the cognitive mutations in human evolution.

54 Ian Tattersall, *Masters of the Planet: the search for our human origins,* (New York: Palgrave Macmillan, 2012), pp. 220-21. This delay is indexed in paleoanthropology as the *Middle Paleolithic* (or *Middle Stone Age* when referring to African archeology): from the appearance of the earliest Homo Sapiens (including archaic humans, 300 kya) until the earliest evidence of behavioural modernity, around 30-40 kya, marking the start of the *Upper Paleolithic* (termed *Late Stone Age* in African prehistory).

present already in Levant around 100 kya;

(2) a new wave of *behavioral* modern humans arrived arrived in Levant around 45 kya (the so called Cro-Magnons);

(3) such a new wave coincides with (a) the swift disappearance of the native Neanderthals (who had shared the habitat for around 60 ky) and (b) the appearance of the first *symbolic objects*.

Neanderthals—indigenous from Europe and the Middle East—had evolved around 200 kya. What this means is that they managed to share the environment with non-symbolic, anatomically modern humans for al least 60 ky. The arrival of behavioral modern humans (coinciding with the appearance of the first symbolic objects in Europe and Levant), also marks the beginning of the swift decline and eventual extinction of our Neanderthal cousins. Something must have happened.

> In the Levant we find evidence for anatomically modern people at almost 100 kyr ago, and Neanderthal remains at a mere 40 kyr ago. *Homo neanderthalensis* and *Homo sapiens* thus shared this region in some way for at least 60 kyr. […] It is surely significant, though, that the last recorded Neanderthal occurrence in this region comes only a few millennia after the appearance of an "Upper Paleolithic" stoneworking technology similar to (although distinct from) that of the earliest Homo sapiens who invaded Europe at about 40 kyr ago.[55]

The new arrivals, the Cro-Magnons, 'in not much more than 10 millennia, entirely eliminated the Neanderthals from the vast area they had inhabited'.[56] The swift wipeout of the Neanderthal population, coinciding with the appearance of symbolic objects, indicates that 'it was almost certainly the adoption of symbolic cognitive processes that

55 Ian Tattersall, *The Origin Of The Human Capacity* (New York: American Museum Of Natural History, 1998) p. 21.
56 Ibid.

gave our kind the final—and, for the Neanderthals, fatal—edge.'[57]

But what is the connection between symbolic thought and this 'fatal edge' that the Cro-Magnons gained over their non-symbolic fellow hominids? Although the answer might remain in the speculative terrain, everything points what I have been calling all along *the event of humanisation*: the invention of language: 'if there is one single aspect of human mental function that is more closely tied up with symbolic processes than any other, it is surely our use of language.'[58] Tattersall thus summarises the possible succession of eventualities:

> humans who looked exactly like us behaved, as far as can be told, pretty much like Neanderthals, for upward of 50 kyr. These humans had brains that were externally like our own, but that evidently did not function in the way that the Cro-Magnons' did in later times. What happened? Did the earliest anatomically modern and the earliest behaviorally modern humans represent separate but skeletally identical species, the latter eventually replacing the former? […]
>
> The only evident (and as we've seen, in terms of evolutionary mechanisms far from unusual) alternative is that the potential for the unique human capacity was born with our species Homo sapiens as a byproduct of some other change, and that it lay fallow, as it were, until unleashed by a cultural (rather than biological) stimulus. This capacity, once declenched, would then have spread quite easily by cultural contact among populations that already possessed the latent ability to acquire it.
>
> What might that releasing stimulus have been? Like many others, I am almost sure that it was the invention of language.[59]

The African site

---

57 Ian Tattersall 'How We Came to be Human', *Scientific American, Special Edition: Becoming Human: Evolution and Rise of Intelligence*, 16:2 (2006), pp 66-73 (p. 68).
58 Ibid. p. 71.
59 Tattersall, *The Origin Of The Human Capacity*, p. 24.

If for some time it was thought that prehistoric objects found in Europe, dating from 40-30 kya (the prime example of which is the ivory Lion-man of the Hohlenstein-Stadel cave in Germany), constituted the oldest evidence of something like symbolic-artistic activity in early human population, recent archeological discoveries in Africa, in particular the paradigm-shifting findings of Christopher S. Henshilwood at the Blombos cave near Cape Town have slightly changed the picture.

The findings at Blombos, including engraved ochre, bone and ochre processing kits, marine shell beads, and refined bone and stone tools, comprise 'the oldest unequivocal evidence of personal adornment to date and proof that our ancestors were thinking like us far earlier than is widely accepted.'[60]

What this evidence would be implying is that the symbolic turn might have happened earlier than some (Tattersall included) might have thought. However, if the length of the delay between the genetic mutation in the human brain and the invention of language has been somewhat extended by a few tens of thousands of years, the Blombos evidence still supports the argument that there was, indeed, such a delay. Most importantly, however, it still points to a non-biological, and hence historical site for the emergence of language. Reporting the findings of their excavations, Henshilwood and his collaborators confirm that

> [g]enetic and fossil evidence suggests that humans were anatomically near modern in Africa before 100 kya. Key questions are whether anatomical and behavioral modernity developed in tandem and what criteria archaeologists should use to identify modern behavior. For the latter, there is agreement on one criterion—archaeological evidence of abstract or depictional images indicates modern human behavior. The Blombos Cave engravings are intentional images. In the light of this evidence, it seems that, at least in

60 Wong, 'The Morning of the Human Mind', p. 76.

southern Africa, Homo sapiens was behaviorally modern about 77,000 years ago.[61]

The uncontroversial facts remain: anatomically modern humans evolved more than 100 kya (in fact, most estimates date it between 200 and 300 kya), the earliest evidence of symbolic thought is from around 80 kya. Something (other than a biological mutation) must have happened during that interval.

The noise of DNA

Chomsky, however, stubbornly faithful to his diehard empiricism might seem to insist that the event should still placed in the domain of biology: it was a genetic mutation which rewired the human brain:

> [i]t is commonly assumed that whatever the human intellectual capacity is, the faculty of language is essential to it. Many scientists agree with paleoanthropologist Ian Tattersall, who writes that he is "almost sure that it was the invention of language" that was the "sudden and emergent" event that was the "releasing stimulus" for the appearance of the human capacity in the evolutionary record—the "great leap forward" as Jared Diamond called it, the result of some genetic event that rewired the brain, allowing for the origin of human language with the rich syntax that provides a multitude of modes of expression of thought, a prerequisite for social development and the sharp changes of behavior that are revealed in the archaeological record, also generally assumed to be the trigger for the rapid trek from Africa, where otherwise modern humans had apparently been present for hundreds of thousands of years. The view is similar to that of the Cartesians, but stronger: they regarded normal use of language as the clearest empirical

---

61 Christopher S. Henshilwood, *et al.*, 'Emergence of Modern Human Behavior: Middle Stone Age Engravings from South Africa', *Science* 295, pp.1278-80 (2002), DOI: 10.1126/science.1067575; see also Christopher Henshilwood & Francesco d'Errico (eds), *Homo symbolicus: The dawn of language, imagination and spirituality* (Amsterdam & Philadelphia: John Benjamins Publishing Company, 2011).

evidence that another creature has a mind like ours, but not the criterial evidence for mind and the origin of the human capacity.[62]

In spite of this—and pace Chomsky himself—as Madarasz asserts, 'genetic mutation' is still a notion abstract enough for it to qualify as a proper event in the Badiouian sense.[63] I will add to Madarasz's insightful perspective the fact that, in any case, *noise* and *information entropy* are all ideas that have been associated with evolution and genetic mutation for quite some time. As James Stone points out,

> the ability to separate signal from noise is fundamental to the Darwin–Wallace theory of evolution by natural selection. Evolution works by selecting the individuals best suited to a particular environment so that, over many generations, information about the environment gradually accumulates within the gene pool. Thus, natural selection is essentially a means by which information about the environment is incorporated into DNA (deoxyribonucleic acid). And it seems likely that the rate at which information is incorporated into DNA is accelerated by an age-old biological mystery, sex.[64]

Moreover, commenting on the pioneering work of bio-physicist Lila Gatlin, Jeremy Campbell writes that '[s]he proceeds on the assumption that when the symbols of DNA are translated into the substance of proteins, communication takes place. This is more than just another metaphor. Gatlin is using the word in the sense intended by Claude Shannon in his 1948 papers on the mathematics of communication.'[65] Yet, what is even more remarkable, is that in her classic 1970 paper, Gatlin starts off from a purely biological domain and sets out, not only to apply the concept of entropy in the field of genetics, but to 'extend the entropy concept primarily through the apparatus of

---

62 Chomsky, 'Biolinguistics and the Human Capacity', p. 176.
63 Madarasz, 'O "sujeito científico"', p 482.
64 Stone, *Information Theory*, p. 3.
65 Campbell, *Grammatical Man*, p. 112.

information theory, but I shall extend this also. Shannon gave the most general definition of entropy to date and I shall extend the concept of Shannon.'[66] This is yet another striking case proving Malaspina's point: noise not only crosses over epistemological boundaries: *the actual crossing will have inexorably modified the territories at either side of the border*.

Furthermore, even if this is the case—i.e. that there was indeed a genetic event somewhere—the case for a non-biological event still stands. As Tattersall explains, the speed at which language spread is typical of an emergent phenomenon (i.e. entropic, irreversible and noisy).

The only possible explanation for this accelerated leap is the fact that once language emerges, *it is itself emergent*, recursive and noisy

Language, transmission, evental site

Tattersall indeed points at something like a proto-educational situation. There must have had been in operation something like a *cultural transmission* that would account for the rapid spread of the new symbolic hominids—something which could not have happened purely via natural selection. Bearing in mind that 'natural selection is not a creative force and can propel nothing into existence by itself [and hence] it can only capitalize on what is already there,'[67] Tattersall then reasons that

> if at some point, say around 70 to 60 kyr ago, a cultural innovation occurred in one
>
> human population or another that activated a potential for symbolic cognitive processes
>
> that had resided in the human brain all along, we can readily explain the rapid spread

66 Lila L. Gatlin, 'Evolutionary indices', *Proceedings of the Sixth Berkeley Symposium on Mathematical Statistics and Probability, Volume 5: Darwinian, Neo-Darwinian, and non-Darwinian Evolution* (Berkeley, CA: University of California Press, 1972), pp. 277-96 (pp. 277-78).

67 Tattersall, *The Origin Of The Human Capacity*, p. 71.

of symbolic behaviors by a simple mechanism of cultural diffusion.[68]

This transmission is one which has to be of necessity *self-inclusive*, insofar as it transmits *itself* through its own operation—in other words, language transmits the capacity for language per se (which, once again, although hard-wired is not a product of natural selection, and hence requires a cultural, rather than genetic, transmission) *together with* all the linguistic, informational, cognitive complexity that language is capable of carrying.

All in all, we find ourselves, once again, in the sphere of Benveniste's *énonciation*, that 'utterance' which is, in effect, 'this putting into action of the *langue* by an individual act of utilisation.'[69] The utterance is the minimal datum of subjective assertion, and this is due in no small part to its paradoxical, pathological, self-reflexivity—as Agamben further explains,

> [t]he sphere of the utterance thus includes that which, in every speech act, refers exclusively to its taking place, to its instance, independently and prior to what is said and meant in it. Pronouns and the other indicators of the utterance, before they designate real objects, indicate precisely *that language takes place*. In this way, still prior to the world of meanings, they permit the reference to the very *event of language*, the only context in which something can only be signified.[70]

However, if Agamben takes here a somewhat vitalist turn,[71] it is at this same junction where one might assert that, in fact, what Benveniste's 'individual act of utilisation' ultimately articulates is nothing other than what Jean-Claude Milner calls the

68 Ibid. p. 70.

69 '*L'énonciation est cette mise en fonctionnement de la langue par un acte individuel d'utilisation*.' Émile Benveniste, *Problèmes de linguistique générale II* (Paris, Éditions Gallimard, 1974) p. 80.

70 Agamben, *Language and Death*, p. 25

71 See, for example, Lorenzo Chiesa & Frank Ruda, 'The Event of Language As Force of Life', *Angelaki* 16:3 (2010), pp.163-180, DOI: 10.1080/0969725X.2011.621233

'blind functioning' of the *letter*,[72] an operation which structurally guarantees the pure universality of the transmission of language: as Milner puts it, it is through 'this blind character, and by it alone, [that] integral transmission is assured.'[73]

By presenting itself within the situation it presents, and thereby opening itself up for a perennial self-critique immanent in its own functioning, the transmission of Language is indeed the archetypical critico-pedagogical site.

Curiosity (reprise)

One must agree with Tattersall then, that '[t]he change over of *Homo sapiens* from a nonsymbolic, nonlinguistic species to a symbolic, linguistic one, is the most mind-boggling cognitive transformation that has ever happened to any organism.'[74]

However, and to go back now to speaking in Badiouian terms: what actually *happened*?

Granted, if we are considering humanisation as an event, we have to accept its randomness, its chance occurrence. The conditioning by language merely happened, and there might be no sense, then, in asking the follow-up question: *how* did it happen?

Leaving the question at that, however, will inevitably bring back "the problem of the transcendental". And, as it should be clear by now, an event for Badiou is *immanent* to the situation for which it happens (the notion of 'transcendental' in Badiou has a very

---

72 'Perhaps "letters" versus "life" is the ultimate forced choice confronting contemporary philosophical materialism' (Clemens, 'Letters as Condition of Conditions', pp. 87-8).
73 Jean-Claude Milner, *Introduction à une science du language* (Paris: Seuil, 1995), p. 22, quoted in Clemens, 'Letters as the Condition of Conditions', p. 100 n. 21.
74 Tattersall, *Masters of the Planet*, p. 220

specific sense, related to the logic of appearance of a body in a world).[75]

Slavoj Žižek, for his part, for whom 'the key philosophical problem today is this: is the transcendental dimension the ultimate horizon of our thinking?' enjoys inverting the question regarding the origin of language: not "what is nature for language" (i.e. can we grasp nature, *including* the origin of language, through *language*?), but "what is language for nature?" (i.e. 'how does its emergence affect nature').[76]

Lévi-Strauss' position—a 'transcendentalism without a transcendental subject', echoed here and there by Lacan—is that 'one cannot think the genesis of the symbolic order.' The self-referential, recursive essence of language makes it as if 'nothing of the symbolic order was here, until all of it, all of a sudden, was *always already* here.'[77] So even a structural analysis must allow for at least one rogue, zero-signifier (to which, thereupon, the whole signifying field is sutured). As Lévi-Strauss himself puts it, '[t]o be viable, an investigation completely focused on structures begins by bowing to the power and inanity of the event.'[78] In Lévi-Strauss this empty signifier takes the name *mana*: 'the mode of appearance of this supplementary signifier which stands for meaning as such', Žižek adds, 'is non-sense.'[79] We are not far, then, from the subtractive knot *void/noise/letter/language.*

For Agamben, however, still faithful to his notion of the 'oath', there is in this 'cognitivist' picture a lack of ethico-political implications—an idea which, one might guess, would not encounter Freire's disapproval (more so if we keep in mind the strong

<hr>

75 'The concept of "transcendental" is without doubt the most important operational concept in the whole of the Greater Logic, or theory of appearing. It designates the constitutive capacity of every world to assign to what abides there, in that world, variable intensities of identity vis-à-vis what also abides there. In short, 'transcendental' designates that a world, in which pure multiplicities appear in the guise of objects, is a network of identities and differences that concern the elements of what appears' (LW, p. 596).

76 Slavoj Žižek, *Absolute Recoil: Towards a New Foundation of Dialectical Materialism* (London & New York: Verso, 2014), p. 98.

77 Ibid.

78 '*Pour être viable, une recherche tout entière tendue vers les structures commence par s'incliner devant la puissance et l'inanité de l'événement.*' Claude Lévi-Strauss, *Mythologiques 2: Du miel aux cendres* (Paris: Plon, 2009), pp. 1291-2, epub.

79 Žižek, *Absolute Recoil*, p. 100.

resonance between Agamben's 'oath' and Freire's strongly political notion of 'true word'). Agamben's criticism is that

> in Lévi-Strauss, the event of anthropogenesis is seen solely in its gnoseological aspect, as if, in the becoming human of man, there were not necessarily and above all ethical (and, perhaps, also political) implications at issue. What I would like to suggest here is that when […] language appeared in man, the problem it created cannot have been solely, as according to the hypothesis of Levi-Strauss, the cognitive aspect of the inadequation of signifier and signified that constitutes the limit of human knowledge. For the living human being who found himself speaking, what must have been just as—perhaps more —decisive is the problem of the efficacy and truthfulness of his word, that is, of what can guarantee the original connection between names and things, and between the subject who has become a speaker—and, thus capable of asserting and promising—and his actions. With a tenacious prejudice perhaps connected to their profession, scientists have always considered anthropogenesis to be a problem of an exclusively cognitive order, as if the becoming human of man were solely a question of intelligence and brain size and not also one of *ethos*, as if intelligence and language did not also and above all pose problems of an ethical and political order, as if *Homo sapiens* was not also, and of course precisely for that reason, a *Homo iustus*.[80]

As we already know, for Agamben there is little point in localising a non-subtantialisable '*arché*', it being but 'a field of historical currents stretched between anthropogenesis and the present'[81], which means that humanisation and the invention of language itself is 'something that is necessarily presupposed as having happened but that cannot be hypostatized into an event in a chronology'.

However, for Agamben it is also true that the *arché*—this big-bang of humanisation—is,

80 Agamben, *The Sacrament of Language*, p. 68.
81 Ibid p. 11.

simultaneously, 'a force working in history' and that its background radiation '*can eventually render historical phenomena intelligible.*'[82] With that in mind, and in order to move forward with the argument, I will open it up to yet another degree of *arche*ological conditioning: on the question of "how language might have began", I will accept Tattersall's own speculation on this matter. In spite of himself admitting that '[e]xactly how this fateful novelty may have been invented is a separate question, upon which it is beyond my expertise to speculate', Tattersall does confess a favourite conjecture amongst many possibilities: viz., 'that an initial form of language may have been invented not by adults *but by children*.'

> Given the fact that the brain is not a static structure like a rubber ball but is rather a dynamic entity that reorganizes itself during development (and indeed, given the right stimuli, throughout life), it is not implausible that a rudimentary precursor of language as it is familiar today initially arose in a group of children, in the context of play. Such prelanguage might have involved words— sounds— strung together with additive meaning. It is hard to imagine that once this invention had been made, society as a whole would not have eventually adopted it.[83]

Tattersall's conjecture about language as the invention of playing children, seems to point to an intriguing site, wherein curiosity and play might have overlapped in order for language and humanisation to happen, a paradoxical site which integrates both randomness and creativity.

Children's curiosity

82 Ibid (my emphasis).
83 Tattersall 'How We Came to be Human', p. 72 (my emphasis); c.f. 'Indeed, I am greatly entertained by the notion that the first language was the invention of children, who are typically much more receptive to new ideas than adults are. They always have their own methods of doing things, and they communicate in ways that sometimes deliberately mystify their parents' (*Masters of the Planet*, p. 221).

Jean Piaget had already observed that curiosity is an integral element of a child's cognitive development. For Piaget this curiosity is triggered by some unfamiliarity, by something uncertain and surprising—as indeed we saw both in Plato and Aristotle's *θαυμάζω* as much as in Bloch's *Realstaunen*: 'one observes that the subject looks neither at what is too familiar, because he is in a way surfeited with it, nor at what is too new because this does not correspond to anything in his schemata.'[84]

Two crucial aspects, however, emerge from Piaget's cognitive-developmental approach. Firstly, that children's curiosity requires something that is neither 'too new' nor 'too familiar', in other words, something lying in the band between *pure noise* and *absolute redundancy*. Secondly, this Piagetian approach is still pointing towards an anxiety, to something like an internal order emerging from an internal disorder: indeed, as Jamie Jirout and David Klahr explain, 'Piaget viewed curiosity as a part of the process of assimilation, resulting from cognitive disequilibrium'. Such internal unbalance is produced by the fact that 'children are curious from birth, with developing cognitive schemas leading to new opportunities for surprising experiences that are discrepant from what a child believes'.[85] In other words, children are already experimenting with the shifting of epistemological borders: they are already operating in Malaspina's epistemological noise.

Furthermore, if curiosity is, for Piaget, the child's 'urge to explain the unexpected'[86]—which, translated to Badiouian terms, would mean that curiosity is what

---

84 Jean Piaget, *The Origins of Intelligence in Children*, trans. by Margaret Cook (New York: International Universities Press, 1952) p 68. Freire's mentions of Piaget are surprisingly scarce: see *Letters to Cristina*, p. 12, *Paulo Freire's Intellectual Roots*, p. 205, and Paulo Freire, *Pedagogia da Esperança: Um Reencontro Com a Pedagogia do Oprimido*, 23rd edn (Rio de Janeiro & São Paulo: Paz e Terra, 2016), p. 34; for connections between Piaget and Freire, see Maria Elvira Martins, 'Aproximações conceituais entre as teorias de Jean Piaget e Paulo Freire: senhores de seu tempo', *IX Encontro da Pós-Graduação em Psicologia: modos de produção do conhecimento: desafios das subjetividades*, 2011), pp. 1227-1248.

85 Jamie Jirout & David Klahr, 'Children's scientific curiosity: In search of an operational definition of an elusive concept', *Developmental Review* 32 (2012), pp. 125–160 (p. 128).

86 Susan Engel, 'Children's Need to Know: Curiosity in Schools', *Harvard Educational Review* 81:4 (Winter

drives the infant's attempt to explain what is, in every respect, for them *an event*—then, children's curiosity can be considered as nothing less than *an experimental playground for subjective truth procedures*.

Finally, and resonating with Tattersall's above conjecture—viz., that language and symbolic thought emerged from children's play—Piaget underlines that the child's investigation of the uncertainties of the surrounding world and of 'the basic laws of nature', is operated through 'the simplest form of symbolic play', utilising everyday objects as much as their own body.[87]

6.3. Play and Critique of Play

If something like a "theory of play" can be traced back to Aristotelian notions of *κάθαρσις*[88], all the way through Friedrich Schiller[89] up to Johan Huizinga's relation (or, as we shall shortly see, non-relation) of play with human nature, it was Roger Caillois who first attempted a 'systematic classification of games'.[90] In his *Man, Play and Games*, published in 1955, Caillois proposes '[a]fter examining different possibilities',

---

2011), pp. 625-45 (p. 626).

87 Jean Piaget, *The Psychology of Intelligence*, trans. by Malcolm Piercy & D. E. Berlyne (London & New York: Routledge Classics, 2001), p. 117. See also Engel, 'Children's Need to Know', p. 637.

88 See Aristotle, *Poetics* 1449b.

89 'Man only plays when in the full meaning of the word he is a man, and he is only completely a man when he plays.' See letters XIV and XV of the *Letters on the Aesthetical Education of Man*, Friedrich Schiller *The Aesthetical Essays*, (The Project Gutenberg)<https://www.gutenberg.org/files/6798/6798-h/6798-h.htm#link2H_4_0018>[accss. 4 Oct 2019].

90 Roger Caillois, *Man, Play and Games* (1958), trans. by Meyer Barash, (Urbana & Chicago, IL: University Of Illinois Press, 2001), p. 12. Like Freire, like Serres, Caillois belongs in a set of idiosyncratic thinkers for whom eclecticism seems to be less a method than a mode of thought. Murray Gell-Mann writes that 'some of us seem to belong to another category [other than Apollonian and Dionysian thinkers]: the "Odysseans," who combine the two predilections in their quest for connections among ideas' (Gell-Mann, *The Quark and the Jaguar*, p. xiii). Considering that Odysseus, according to some, was Hermes' great-grandchild (Apollodorus 1.9), one could equally speak of *Hermetic thinkers*.

a division into four main rubrics, depending upon whether, in the games under consideration, the role of competition, chance, simulation, or vertigo is dominant. I call these *agôn*, *alea*, *mimicry*, and *ilinx*, respectively. All four indeed belong to the domain of play. One *plays* football, billiards, or chess (*agôn*); roulette or a lottery (*alea*); pirate, Nero, or Hamlet (*mimicry*); or one produces in oneself, by a rapid whirling or falling movement, a state of dizziness and disorder (*ilinx*).[91]

Competition (*agôn*), ritual (*mimicry*), vertigo (*ilinix*) and chance (*alea*): such are in Caillois classification the four figures in which human games manifest themselves. Caillois' theory of play builds on the earlier work of Dutch historian Johan Huizinga.[92] Somehow contradicting Schiller's above statement, Huizinga writes in his influential *Homo Ludens*, that

> [p]lay is older than culture, for culture, however inadequately defined, always presupposes human society, and animals have not waited for man to teach them their playing. We can safely assert, even, that human civilization has added no essential feature to the general idea of play. Animals play just like men.[93]

What Huizinga suggests here then is that play, in itself, cannot define anything like a *human nature*, nor a notion of culture. Much to the contrary, the implication seems to be, as Sandino Núñez observes, that

> the properly human, or social (*culture*, *civilization*) is therefore established by a certain capacity to stop playing, to establish an antagonism between play and something which is not play and which is also "superior" to play: a *reality transcendent* to play and that

---

91 Caillois, *Man, Play and Games*, p. 12.
92 Caillois, though, was not entirely uncritical of Huiznga: see *Man, Play and Games*, pp. 1-2.
93 Johan Huizinga, *Homo Ludens: A Study of the Play-Element in Culture* (London, Boston and Henley: Routledge & Kegan Paul, 1949), p1. Huizinga was one of the key developers of *cultural history*, a discipline pioneered by Jacob Burckhardt during the mid eighteenth-century; the *Annales* school in France, of which Lucien Febvre was a prominent leader, became the other main player in the field: as it happens, Febvre is a key reference in Freire's writing.

allows to speak and to think play. That reality is *logos*, language.[94]

In this sense, humanisation, language, culture (viz., *education* in the Freirean sense) is not driven by play, but by *the sublation of play*.

One can sense a jarring discord noisily emerging here: (1) *curiosity*, as in Freire (*and* indeed, Plato, Aristotle, Hobbes, Piaget, Bloch), is an essential drive, or symptom, of *humanisation*; (2) concurrently, *language* is the singular emergence defining humanisation; (3) furthermore, this curiosity/language singularity emerges as a result of *children's play* (as Tattersall and Piaget argue); (4) play, however, is deemed 'anterior to culture' (Huizinga) and hence *not equivalent to logos and language*, (5) therefore, *play must be sublated* in order for a properly humanising subjectivity to obtain (Núñez).

So, paradoxically, we have that (a) play conditions the emergence of humanisation and language, *and* (b) play needs to be transcended in order for humanisation and language to emerge.

At this point, it might be worth noting that, conceptually speaking, there is no harm in encountering such a paradox. On the contrary, considering that, as I have been arguing all along, paradox—or rather, the epistemological and internal noise it produces—is the symptom of every evental rupture, its murmuring might very well be signalling the proximity of a truth lurking nearby.

Having said that, if the paradox/noise/anxiety *dispositif* is integral to the methodology proposed here, inconsistency is certainly not. So in order that the former does not decay into the latter, the concept of play, as it stands, will require some further examination.

---

94 Núñez, *La Vieja Hembra Engañadora* p. 70 (original italics).

Pedagogy of play?

As mentioned earlier,[95] Tyson Lewis and Daniel Cho point to today's key politico-pedagogical imperative (the defence of critical pedagogy against the neoliberal takeover of education) and, along not dissimilar lines as the ones I am attempting here, invoke something like a Badiouian-Freirean educational theory as a possible site of resistance. In doing so they problematise a postmodern notion of "play in education" as a bland, 'flaccid' response to our current predicament:

> [i]f we assume Badiou and Freire's definition of education, it is clear that education within its current one-dimensional, standardized form is not education at all but rather the foreclosure of education since it is denied its most radical and revolutionary dimension. Thus the central problematic facing both Freire and Badiou becomes clear. First, for Badiou, if education is, indeed, organizing knowledge for a breakthrough of truth, then it is *already* engaged in the project of truth—what then is the passage from a technocratic, administered "education" (like we have today in the US) to education as a project of truth? Second, for Freire, if education is a space where students are subjectivized by a transformative praxis, then that transformative space must *already* be internal to education itself—where then is the necessary break within the prevalent "objectivity" of contemporary schooling practices through which such transformation could effectively take place? Is the only path left for education to be that of standardization?

Lewis and Cho argue that a common response to this question, coming more from neoliberal models of education than from properly critical pedagogy, is what they call 'pedagogy of play':

> [o]ne possible response to this question is constructivism, or what we will call a

95 See chapter 1, section 1.2.

pedagogy of play. Here educational theorists encourage students to construct their own meaning(s) from existing curricula and/or their experiences with the world. Such theories of creative play seem to always deny the ideological mediations that structure the very frame of these playfully creative acts. Furthermore, such encouragement of playful creation of meaning denies—if not explicitly, then, at the very lest, implicitly— the existence of Truth. Is such a stance not similar to that flaccid form of postmodern relativism and solipsism? Is the ludic postmodern pedagogy of play and affect the only other viable alternative to the standardization movement?[96]

This critique of play seems to be in complete accordance with Núñez's analysis about what could be interpreted as *an appropriation of the praxis of play* by contemporary capitalism, and something which might very well be *both* cause and symptom of the current educational and cultural crisis. For Núñez, 'posmocapitalist culture [*la cultural posmocapitalista*] compulsively oscillates between life, or pure experience as an unsublimated, extreme liberation of social energies, and the pure disciplinary order of rituals and simulacra.'[97] In Núñez's analysis, the poles of this oscillation can be identified with, on the one hand, the 'games of vertigo' (Caillois' *ilinix*), which Núñez associates with 'pure experience', or 'that-which-does-not-die' [*lo-que-no-muere*] and, on the other hand, 'games of costume and challenge' (respectively, Caillois' *mimicry* and *agôn*), which are linked to a notion of 'pure order', or 'that-which-does-not-live' [*lo-que-no-vive*].

Núñez's diagnosis of the bipolar condition of contemporary culture contains not a few overtones resonating with Badiou's own verdict about the status of a 'democratic materialism', wherein the pure circulation of bodies and languages obliterates any emergence of truth.[98] If, for Badiou, a truth emerges as that which disturbs, or punctures

96 Cho & Lewis, 'Education and Event', p. 3.
97 Núñez, *La Vieja Hembra Engañadora*, p. 70.
98 For Badiou, contemporaneity defines a logic of appearances that can be reduced to one valid statement: *there are only bodies and languages*—to which Badiou supplements: *except that there are truths*, thus

a hole in a status quo trapped between the oppressive Law of the state and the horizontal circulation of opinion and identities, in Núñez's version, 'sense and language'—which are here indices of Truth—'happen (may happen) in between the that-which-does-not-die of pure experience (the partial object-without-metaphor) and the already-dead of obsessive structure and norm.'[99]

Sense/language is, for Núñez, a 'miraculous instant', a fleeting appearance, interim, provisional and inter-medial 'in-between the psychotic and the obsessive: in-between *that which does not die* and *that which does not live*. In-between the harassment of voices and the threat of the Word.' The association, then, becomes clear: on one side, a schizophrenic circulation of opinion, communication, bodies and identities: 'the voices, the hallucinated fascination of partial objects […] evidence that sense arrived too late', and simultaneously, on the other, a pusillanimous deference to the state and to empirical scientism: 'the Word, the vacuous obedience to bureaucratic order, evidence that sense arrived too early'—a situation I would describe as the production of a *sick temporality*. In Badiou's account, there are bodies and languages with the exception of truths: in Núñez's version, Truth (viz., *language* and *sense*) is the delicate, fleeting flickering of something slightly out of temporal joint:

> [l]anguage can never plainly compose the balanced figure of a *just in time*, because such an imbalance and such a delay are precisely what casts sense towards Platonic *dianoia* and *Aufhebung*: should there be definitive and plain sense, there would be no language. That unbalance *is* language.[100]

One can fully get behind this argument. Núñez's connection between the current

---

sublating the particularist duality of a hegemonic 'democratic materialism' into a universalist emancipatory 'materialist dialectics' (see LW, 'Preface', pp. 1-40).

99 Núñez, *La Vieja Hembra Engañadora* p. 66.

100 Ibid. p. 67.

'postmocapitalist' state of affairs and Caillois' typology of play seems accurate enough, and the notion of language as an unbalance, as a 'miraculous instant' of sense, is completely consistent with what I am proposing here: language-as-subject-constructing is, indeed, always already incomplete, never absolute—something like *a delicate noise in search of some sense*.

Nonetheless, there remains unanswered in Núñez's account a begged question: we are *not* told if there actually *is* any alternative figure of play other than those games oscillating between the psychosis of vertigo and the obsession of rules and mimicry. What seems to be missing in this account is a figure of play which could be used to describe, or model, a truth-seeking, subject-constructing process, one in which sense and language *could actually happen*. In other words, a play able to produce sense in the unbalance of a delicate language quivering in-between the too-lateness of voices (Badiou's 'bodies and languages') and the too-earliness of the Word (in Badiou, the disastrous 'absolutisation' of the power of Truth). In short, a play expressing a *healthy temporality*: after all, that is what we are after in the dialogue prescribed by an education by truths.

And so, to repeat the question: could there *be* a notion of play that would describe, or fit, such emancipatory, subject-constructing, critico-pedagogical philosophical outlook? The answer, in fact, might be implied by a conspicuous omission in Nuñez's application of Caillois' categories—which, to be fair, is intended as a *critique* of contemporaneity, rather than an *apologia* of play. Granted, the bipolarity of our postmocapitalist condition *can* be described in terms of vertigo on one side, and simulation/competition on the other: any attentive reader, however, will note that in Núñez's narrative, Caillois' fourth category is distinctively lacking: missing in-between the pure vitalism of *ilinix* and the dead letter of

mimicry and *agôn*, the pure chance of *alea* is nowhere to be seen.

From this omission we can then conclude, by default, that in our current posmocapitalist order what is lacking is *a temporality of pure chance*. Unsurprisingly, it would seem that, within the democratic materialist order of the state, noise—*proper noise*—needs to be foreclosed. Except, that is, for the imperial noise of the state itself: the statistics of economic rituals, control of information and power, a crooked game of loaded dice which only a few privileged 'princes' get to set the rules of.

Statistics, or, the state's sacred rigged game

Clearly, from the point of view of the state, the uncertainty of *alea*, needs to be, somehow, *controlled*: the fact that this is (obviously) an oxymoron, renders this control (or rather, the *illusion* of this control) even more powerful (and hence, as Jean-Pierre Dupuy has shown, something touching on the *sacred*).[101]

In Malaspina's incisive analysis, the notion of statistics points to the disjunction between, on one side, power as control of information and, on the other, the emergence of the new. 'Uncertainty falls on the side of noise and excess together with inaccuracy, illegitimacy and illegality'; the new is merely 'news': the state makes sure that 'information must be understood as facts and data that serve the consolidation of knowledge and law and order, hence consolidating established power through established knowledge, by reducing uncertainty, disorder and subversion'[102]—all which could fit, pace Malaspina herself, Badiou's own picture of the state's knowledge foreclosing the illegal truth of an event.

A culture, and its education, modelled on the uncertainty of chance and of what

---

101 Dupuy, *The Mark of the Sacred*, pp. 1-19.
102 Malaspina, EN p. 134.

Badiou calls the 'random enquires' of the subjects of truth, is foreclosed. Noise acquires its vulgar meaning 'as improper and immoral behaviour'. For Malaspina, it is key to understand how did these 'negative connotations' end up becoming 'the opposite of knowledge'.[103]

> It is worth looking for the answer to this question in the institutions of knowledge, where the activity that produces information, i.e. investigation, study or instruction, is consolidated under the authority to exclude uncertainty, and to expel noisy individuals and all those unreceptive to the communication or reception of accurate facts or data.[104]

A proper understanding of the relation between information and noise requires an understanding of the threshold between them, which, in the end, is understanding the relation between 'established knowledge and power'. The name of the attempt by the state to control the borders of this uncertainty is *statistics*.

> In its historical origin, the relation between knowledge and power is thus not only explicit, but fundamental and moreover foundational, since statistics first designated the "science of the state", and was institutionalized as such during the seventeenth century by Hermann Conrig (1606–1681) who called it the: "nomenclature of knowledges necessary to the Prince". […] What we call statistics today thus emerges from this history of state administration, from the correlation it establishes between the knowledge and power.[105]

For Malaspina, the symptomatic contradiction between Shannon and Wiener's definitions of information (entropy or "freedom of choice" in the former, negation of entropy or "negentropy", in the latter), 'is not the question of a mere point of view, but a problem deeply rooted in our need for prediction and control, but also of discovery of

---

103 Here 'knowledge', of course, is *not* meant in the Badiouian sense, i.e. as contraposed to 'truth'.
104 Malaspina, EN p. 135.
105 Malaspina, EN p. 136; for Conrig's quote, see Alain Desrosieres, 'Statistique', *Dictionnaire d'histoire et philosohie des sciences*, 4th edn (Paris: PUF, 2004), pp. 1008-24 (quoted in Malaspina, ibid).

novelty'. This dialectic between, on one side, the predictability of knowledge and the security of redundancy, and, on the other, the need to accommodate the irruption of the new is, in Malaspina's analysis, akin to the opposition between subjective pure reason (what I refer to as *an ethics of the axiomatic*) and objective empiricism: according to Malaspina, this conflict manifests itself in the statisticians' rejection of the *a priori* implied in probability calculus, which to them 'appears too "subjective"', and who require the '*a posteriori* grounding [of] reliable information' provided by statistical data.[106] 'For two centuries' Malaspina continues,

> the emerging discipline of modern statistics is thus caught between on the one hand the "subjectivism" of the calculus of probability, which provides an *a priori* "measure of uncertainty", and on the other hand the certainty provided *a posteriori* by the statistical frequency of events.[107]

And precisely a probabilistic logic is what needs to be posited to supplement Badiou's *Greater Logic* of appearance: viz., *a logic of knowing*, constructed on the unadulterated, subjective chance of probability rather than the *a posteriori* positivism of statistics. As Badiou himself asserts, 'no genuine political sequence is representable in the universe of numbers and statistics'.[108]

So if statistics is the only game of chance in town, this does not necessarily imply that Caillois' *alea* is truly operational—in fact, the opposite is the case. Chance might very well name the element of play that an evental site for language and critical education requires: the healthy anxiety that comes with freedom of choice, the creative *making sense* out of nonsense and metaphor—such would be the lesson of a dice throw that does not

---

106 EN, p. 137.
107 Ibid.
108 Badiou, M p. 7.

abolish chance. However, when *alea* is subsumed by statistics, the result seems to be that we are left pathologically oscillating between, on one pole, the psychotic vertigo of *ilinix*, wherein absolute uncertainty effaces every possible truth, on the other pole, the obsessive absolutism of ritual *mimicry* and *agôn*, wherein any arbitrary Rule becomes immovable.

Admittedly, the subject-process involved in an education by truths, does require the disciplining of rules as much as the performance of ritual: it is not a matter of foreclosing either of them. However, it seems that what is needed is a *healthy disturbance* dithering the *pure oscillation* between those two poles in order for it not to become *pathological*: such noise can only be provided by the randomness of chance.

Noise will have rendered the oscillation into a movement, a Brownian motion, *a random trajectory*: and such trajectory is none other than that drawn by a subjective truth procedure, chaperoned by education.

A world's play

For Kostas Axelos, play is not restricted to humanity's play *in* and *with* the world, but to a notion of 'world's play "itself"', or more precisely, 'world as play, the unfurling of play in which man's play and world's play encounter each other perhaps to become one. Man is a player *par excellence*, but he is also constantly thwarted.'[109] Axelos not only associates play with language, 'as a combinatory system, as play between signs and rules': for Axelos, play is conditioned in a similar manner as philosophy is for Badiou: there is today not only the 'varied play of "love"', but also the fact that 'poetry and art are becoming more and more explicitly play'—all of which, together with 'the somewhat

---

109 Kostas Axelos, 'Play as the System of Systems', *SubStance* 8:4:25 (1979), pp. 20-24 (p. 22).

empirical play of world politics [and] the play of technē, fed by the play of the sciences' comprise what Axelos calls the 'world's play', a systemic, universal play which, by tying 'man to world', institutes a 'system of systems [*l'ensemble des ensembles*].'[110] To put it differently: play, for Axelos, is the relational subject *par excellence*.

Most importantly, however, is the fact that play becomes the connector, the transmitter between humanity and the world: 'man, transitional being, being of transition. It is among men that the play of question and answer between man and the world takes place. For these two zones [*ensembles*] tend to become one [*ensemble d'ensembles*]'.

Play it seems, is not only *hermetic*: it is a theophany of Hermes himself.

Furthermore, if one of the Freirean key injunctions is to 'read the world'[111], for Axelos this same reading, though necessary, is not sufficient:

> What is our role as readers and parties to play, as parties to diverse forms of play? Our task consists in knowing how to read in a given instance of world's play every other type of play, and, principally, the play of the world. But we must not only read, we must play, turning the rules upside down when necessary, experimenting beyond the subject-object dichotomy with a plurality of perspectives on each problem. It is a question of matching, with serenity and sadness, to world's play the unspeakable, the unnameable, the unplayable without hurriedly forcing it into little systems which would exhaust it with their reductionist, unilateral, imperialistic methods. We must hold ourselves ready for play which summons us, play of language, thought, work, struggle, love, and death.[112]

---

110 Ibid.

111 See Paulo Freire, 'Reading the World and Reading the Word: An Interview with Paulo Freire', *Language Arts* 62:1 (1985), pp. 15–21.

112 Axelos, 'Play as the System of Systems', p. 24.

If, as I have argued, the 'reading the world' implies for Freire an epistemological curiosity—which seems implausible without an element of play—in Axelos the injunction is explicit: *one must play*. However—and more importantly—for Axelos one must do so under two conditions: (1) one must play 'turning the rules upside down when necessary', (thus resisting the absolutism of the Word, implied in *mimicry* and *agôn,* and its obsessive eagerness for sense) and, simultaneously (2) not forcing what is not-yet consistent into 'little systems', have the courage to accept it as 'unnameable' with 'serenity and sadness' (thus sublating the psychosis of *ilinix* and always-already-late arrival of sense, into something like a courageous *acedia*).[113]

In short, play teaches us how to *let noise be noise.*

Deleuze's divine game

On the other hand, Deleuze's 'divine game', (which he opposes to the 'human game', not hiding an intended distancing from Axelos' immanently humanist play), is the site where 'Ideas come from'.[114]

If Axelos's dice are thrown *in* the world, Deleuze's 'are thrown against the sky'; whilst Axelos' transmission happens between 'man and the world', Deleuze's play seems purely internal: '[i]t is a game on two tables', played in the 'fracture or hinge [...] of empty time, the *Aion* through which pass the throws of the dice. On one side, nothing but an *I* fractured by that empty form. On the other, nothing but a passive self always dissolved in that empty form'.[115]

---

113 Commenting on Lucretius' poem, Badiou writes that 'the bare truth, prior to the occupation of its place, appears essentially sad. For most people, the place of philosophy, the place of the proving of the true is, as seen *from afar*, melancholic' (C p. 47); see also *Infinite Thought*, p. 106.
114 Deleuze, *Difference and Repetition*, p. 282.
115 Ibid. p. 284.

Deleuze's divine game is one that excludes nothing, that does not abolish chance, that produces a healthy temporality.

Be that as it may, Badiou is still scathingly critical of Deleuze's notion of chance.[116] Let us remind ourselves that, as Brassier explains, a Badiouian truth procedure 'is random or aleatory.'

> Chance provides the aleatory substance of subjectivation because the subject of the truth procedure forces the generic extension through a series of entirely random choices; distinguishing *x* from *y* without recourse to a principle or concept by which to differentiate *x* from *y*.[117]

If, for Brassier, 'Badiou is curiously reliant on a suspiciously commonsense or intuitive notion of "chance" or 'randomness"', on the other hand,

> Turing showed how any deductive procedure could be defined in terms of recursive functions, algorithmically generated, and therefore automated as a computable function. And this automation of computable functions is entirely compatible with the straightforwardly intuitive characterization of "chance" Badiou seems to invoke in his account of the deductive process that constitutes truth.[118]

As we shall see in the next chapter, it is precisely this Probabilistic logic which not only might refine what Brassier calls Badiou's 'suspiciously commonsense' notion of chance, but might allow for a stronger conceptualisation of relationality.[119]

---

116 See Badiou, *Deleuze: The Clamor of Being*, chapter 6, 'Eternal Return and Chance', pp. 67-77.
117 Ray Brassier, 'Nihil Unbound: Remarks on Subtractive Ontology and Thinking Capitalism', *Think Again: Alain Badiou and the Future Of Philosophy*, ed. by Peter Hallward (London & New York: Continuum, 2004), pp 50-58 (p. 54).
118 Ibid. p. 55.
119 Ibid.

7. Cadence: Humanisation, Noise, Relation, Education

"Beauty is truth, truth beauty," – that is all[1]

7.0. Intro: Relationality and the Production of Time

Badiou's subtractive non-relationality

An attentive reader might have noticed that Peter Hallward persists, time and again like an olympian gadfly, in exacting from Badiou an answer to the question of relationality—more specifically, Hallward's 'friendly demands' continually aim for what he (correctly) perceives as a lack of relationality in Badiou's ontology.[2]

> From the outset, Badiou banishes from ontology precisely this general "feel for the world" as no more than an invitation to sensual and ideological confusion. The question is whether the resulting clarity can ever adequately move beyond its operational abstraction.[3]

For Hallward there is in the lack of relationality, not only in Badiou but in all of French contemporary thought—including, yes, Deleuze's—something like a symptom that needs to be addressed.[4] And it is indeed a necessity, inasmuch as it pertains to Hallward's unshakable political subjectivity. If it is true that '[t]oday's French

---

1 John Keats, 'Ode on a Grecian Urn', *The Oxford Book of English Verse*, ed by Arthur Thomas Quiller-Couch (Oxford: Clarendon, 1912) pp. 729-30.

2 See Alain Badiou, 'Afterword: Some Replies to a Demanding Friend', *Think Again: Alain Badiou and the Future Of Philosophy*, ed. by Peter Hallward (London & New York: Continuum, 2004), pp. 232-237.

3 Hallward, *Badiou*, p. 106.

4 According to Hallward, the otherwise very diverse work of thinkers such as Bergson, Lacan, Badiou, Deleuze, Henry or Rosset all present this common trait: non-relationality; see Peter Hallward, 'The One or The Other: French philosophy today', *Angelaki*, 8:2 (August 2003) pp. 1-32.

philosophers have developed a conception of singular or non-relational thought as varied and ingenious as any in the history of philosophy', in Hallward's view, however, '[t]he task of tomorrow's generation of thinkers may be to develop an equally resilient relational alternative.'[5]

Without any pretence of being up to such an important task, the concluding paragraphs of this thesis will not aim to finalise an answer to these issues, but rather to allow them to resonate with the themes developed thus far.

The hinge between subtraction and relationality

One of the key corollaries that *noise-as-the-temporalisation-of-the-void* provides is a perspective from where to think the issue of relationality, without betraying the subtractive, non-relational origin of the void.

In order to gain such perspective, however, one must take a route that leads—yet again—towards a head-on engagement with paradox. The incoming issue here would be that, apropos "relation", the pair *void/noise* carries a loud discordant polarity: we are hit simultaneously by (a) *absolute non-relationality* on the side of the void, and (b) *pure relationality* on the side of noise.

And, once again, rather than resisting such paradox, the technique will be to absorb its force and use it to our advantage.

With respect to the void, it is an incontrovertible fact that, as Hallward observes, its emptiness proscribes it from containing anything at all—including, of course, relations. Moreover, it is this lack of relation which in fact makes the void ontologically empty: for

---

5 Peter Hallward, 'The One or The Other', p. 23.

Hallward, non-relationality *precedes* or *over-determines*, subtraction itself.

> The void is not so much verifiably "empty" as demonstrably impervious to or devoid of
> *relations*. Universally included in its every part, the void of a situation is bordered, or
> "edged," by a place that is impervious to the relational mechanisms devised by its state
> —and thus impervious to relationality *tout court*, since the elements of a situation,
> subtracted from the mechanisms of the state, exist independently of interelemental
> relations, as a purely disordered collection of singularities. In short, the void is
> nonrelational and without place; it is nothing yet is included in all things; it is located
> nowhere yet scattered everywhere.[6]

And the foreclosure of relation that comes with subtraction is, for Hallward, clearly a problem: granted, one must subtract oneself from this world (from *things as they are*), and affirm that there will always be the possibility of something else—*without*, for all that, completely sacrificing every notion of relationality. If 'it is certainly essential that philosophy do something other than merely react (or resign itself) to the world' the fact remains that '[w]e will never change tomorrow's world, however, on the basis of a non-relation'.[7]

Meanwhile, and by harsh contrast, we have Hainge's inherently (neo) Deleuzian position—one which most sound-studies scholars would agree with—maintaining that noise is, in itself, pure relationality. Indeed, not only is noise 'the mark of an ontology which is necessarily relational', for Hainge, it is 'through noise' that

> we are able to intuit the serial relations that link the heterogenetic modes through which
> everything comes to be in an ontology that does not believe in fixed identities, beings
> and transcendent essence, but only difference, becomings and relations. If noise inhabits

6 Hallward, *Badiou*, p. 273.
7 Hallward, 'The One or The Other', p. 23.

everything because everything is in actuality formed out of noise, then what noise

ultimately points us to is the relational ontology according to which the world comes to

pass...[8]

Such a position, as noted earlier, merely flattens ontology in a Spinozist-

Deleuzian gesture that conceives 'the world and everything in it as expressive, arising out

of the movement or force of differentiation through which all expresses itself in

existence.'[9]

Alternatively, what I am proposing here is that relation comes about the moment that

the (non-relational) void is forced into movement, not by some sort of creative,

immanent force of life, but by a metanoic spike which transforms the voided animal into

a subject. Rather than as an expression of some given, immanent creativity, noise and

relation come about as the consequence of an event. It is in the course of the subtractive

trajectory of a truth that the void becomes an indiscernible noisy murmur, as the animal

converts to subject in their affirmation and investigation of the consequences of the

event. Therefore, relation is not ontologically given, it emerges from these post-evental

investigations, these enquiries which are necessarily praxial, inter-subjective, dialogical

and noisy. It is none other than this movement what Badiou refers to as *the production of

time*—and it is here, I claim, wherefrom the free energy available for educational work is

to be extracted.

Relation begins with noise *and* relation requires some subject at the edge of the void—

which means: some time-producing work at the threshold of noise. As we saw in the

previous chapters, the name of this irreversible temporality, of this entropy produced by

8 Hainge, *Noise Matters*, p. 14.
9 Ibid.

(some will say "against") the negentropic investigation of a truth, fuelled by curiosity and anxiety, is education.[10]

From the inside to the outside

Furthermore, and now looking at the issue of relationality from a Freirean perspective, this schizductive, hermetic noise—which in Freire takes yet another name, viz., 'epistemological curiosity'—performs a further crossing, *this time from the inside to the outside*, closing the loop of alterity and effectively (re)producing relationality. And in Freire it all starts, of course, with consciousness—*however*,

> [c]onsciousness is a starting point. It is by becoming conscious of an object that I can account for it. Yielding to my curiosity, the object is known by me. My curiosity, however, before the world, which is "not-I," perceives the object without reaching an understanding of its reason for being. This curiosity, if it undergoes a transformation process, becomes what I call epistemological curiosity and may perceive not only an object but also the relationships among objects, allowing me to realize their reasons for being.[11]

As Adriano Nogueira explains, this relational loop activated by curiosity is related to the '*poietic* spirit' [*espíritu poyético*] that Freire attaches to the pedagogical process. It is 'through the work of curiosity that objectives appear, laid bare within their

---

10 If it seems that the notion of relation appears here subtracted from Nature, deficient in all of the ethological aspects that it evidently should also carry, that is indeed the case. For better or worse I am bracketing relation as a purely subjective, humanising (scientific, political, artistic and erotic) capability. Nonetheless, I still hope that the notion remains, if not consistent, at least minimally resonant with Hallward's definition: '[b]y "relation" I mean a process that operates terms, in such a way as to condition or inflect (but not fully to generate) the individuality of each term. A relation is only a relation in this sense if its terms retain some limited autonomy with respect to each other. A relation is only a relation if it is between terms that can be meaningfully discerned, even if the means of this discernment proceed at the very limit of indiscernment'; see Peter Hallward, *Out of This World: Deleuze and the Philosophy of Creation* (London: Verso, 2006), p. 153.

11 Freire, *Letters to Cristina*, p. 182 (translation modified).

fabric of interactions.' For Nogueira, Freirean epistemology 'is a way of facing curiosity, a way of dealing with the corporeality of epistemology [*un modo de tratar la corporalidad de la epistemología*]'. Combining subjectivity, dialogue and corporeality, Freire develops such curious, epistemological objectivity, which allows him to 'come out of himself, into the world. Relating, weaving, proposing threads of intelligibility. Searching for the *raison d'être* of objects and phenomena.'[12]

All of which brings us back to Bloch's *Realstaunen*, the 'astonishment' or 'amazement', which, as we saw in chapter 2, can be correlated with Freire's 'curiosity'. Most crucially though, just like in Freire, for Bloch this notion implies a movement outwards, from the inside of the subject, reaching towards the world outside. As Jameson points out '[a]stonishment is therefore for Bloch […] one of the most concrete possible modes of our being-in-the-world, the correlative, on the subjective side, of an objective disposition of the world itself.'[13]

Astonishment, which is at the heart of a humanising, creative urge, provides a second term in the subjective dialectic, wherein the cogito begins in a too-closeness of complete darkness.

> Just as the darkness of the lived instant represents one pole of conscious anticipation and of the anticipatory disposition of the world as well, so also material astonishment [*Realstaunen*] […] constitutes the other. […] [Astonishment] is the very source or origin of the world itself, ever at work and ever hidden away within the darkness of the lived instant.[14]

Just as in Freire, this dialectic that passes from the darkness of the lived moment

---

12 Adriano S. Nogueira, 'Prefacio', *Cartas a Cristina: Reflexiones sobre mi vida y mi trabajo*, trans. by Stella Mastrángelo & Claudio Tavares Mastrángelo, 3rd edn (México, DF: Siglo XXI, 2008), p. 13.
13 Jameson, *Marxism and Form*, p. 122.
14 Ernst Bloch, *Das Prinzip Hoffnung*, pp 353-354 (quoted in Jameson, *Marxism and Form*, p. 122).

(Badiou's 'voided animal') to astonishment/curiosity (or, again, Badiou/Beckett's 'imperative of saying') indexes an internal temporality—a both anxious *and* creative noise-inside. But, most importantly, astonishment, its impulse for creative shaping, is, for Bloch, what leads the subject's movement from the inside back to the outside, from the *I* to the *We*:

> [b]ut exactly here, totally inside, nothing can happen just by itself. The impulse, as it collects and appears on a higher level, must be unselfish and communal. It must transfer into commonality, moving outward from here to understand what is urgent, brightening. The egoistic I remains imprisoned within itself, but for the spark in us, once we bring ourselves to it, the purer, higher life will certainly become urgent and bright.[15]

And, clearly, this *We* is none other than Bloch's name for *relation*.

Noise as (subtractive) resistance

Noise in this sense, might be the 'means of production' of education. As for the usefulness (or otherwise) of this notion of noise: my contention is that, today, noise constitutes the only bastion strong enough to resist the onslaught of late capitalism. And this is simply because noise, from the capitalist-market's point of view, has no use value whatsoever: the production of noise is immanently subversive, inasmuch as it produces *innen-* and *um*-subjects that are completely indigestible to capitalism. This indigestibility represents the subtractive face of noise (on the side of an ontology woven on the void); but noise, being educational, is also immanently relational (on the side of the subjective production of a new logic).

---

15 Ernst Bloch, *The Spirit of Utopia* (1964), trans. by Anthony A. Nassar. (Stanford: Stanford University Press, 2000), pp. 203-04.

Noise remains subversive, less by its destructive potential, than by managing to remain altogether ontologically subtractive and logically relational.

7.1. From Being to Appearing: Relation and the Activation of Temporality

The appearance of relation

Ultimately, however, Badiou might have eventually answered Hallward's concerns. After all, in Badiou's system the mathematical non-relational ontology of *Being and Event* is supplemented with the inherently relational onto-*logy* (i.e., the logic of *appearing*) of its companion text, *Logics of Worlds.* This development happens by way of Badiou's coming to terms with 'Set Theory's rival theory regarding mathematical foundations: category theory'.[16] As Tzuchien Tho explains,

> [i]f the rallying call of [Badiou's two volume Being and Event] project is the equation "mathematics = ontology" then we might schematically align one sort of mathematics with each of the volumes. Pertaining to the first volume, set theory, or more precisely Zermelo-Fraenkel set theory with the axiom of choice (ZFC), is the mathematics relating to ontology with respect to being-as-such. On the other hand, for the second, LW, it is category theory that will provide the theory of beings, or the theory of appearance.[17]

Badiou here steps out of the realm of being into the phenomenal world of appearing: something like a phenomenology, albeit one with a very Badiouian twist: an onto-*logy*, a logic of appearing (the term 'logic', too, will have for Badiou a very specific meaning). 'Category theory formalises the abstract structures of set theory by means of

---

16 Badiou, BO p. x.
17 Tzuchien Tho, 'Category Theory', *Dictionary*, pp. 40-7 (pp. 40-1).

graphs (i.e. nodes (or objects) and arrows (or morphisms): it is a theory of functions—which is to say, a theory of *relations*).'[18] In other words: whereas Badiou's *ontology* is unabashedly non-relational ('the only relation is belonging'), his *phenomenological logic of appearance* is intended as relational.

Hallward's reckoning, however, is that this phenomenological current seems to carry Badiou adrift towards Spinozist-Deleuzian waters—which would be something of an alien territory.

> We might say that the shifting of Badiou's attention from the being of being to the appearing of being already implies a shift in priorities that brings him closer to Deleuze than ever before: from now on, the ultimate reference to ontological inconsistency or "chaos" will always be mediated by the exploration of precise ontic strata or "complexity," in roughly the sense made current by complexity theory.[19]

Without completely disagreeing on this, it might nevertheless be possible to retune Hallward's assertion by positing that (1) Badiou's 'ontological inconsistency' is related to *noise*, rather than to *chaos* (and noise and chaos are not the same thing); and (2) we would be on safer (Badiouian) grounds by exploring *information theory*, rather than (the slightly too vitalist) *complexity theory*.

Transitivity, reflexivity, symmetry, anti-symmetry: order ⊨ time

The key formal distinction between being and the logic appearing (or onto-logy) is here operated by the notion of *orderliness*. In Badiou, the distinction between ontology and onto-logy hinges in the difference between ordered and unordered sets.

Most crucially though, as we saw, it is precisely in the passage from being to

---

18 Badiou, BO p. 163.
19 Hallward, *Badiou* p. 298.

appearing that 'relation' emerges within Badiou's system. What is more, Badiou even explicitly formalises the notion: relation is an ordering obeying three dispositions, viz., reflexivity, transitivity and antisymmetry.

> A relation between elements of a set A is an order-relation, written ≤, if it obeys the following three axiomatic dispositions:
>> a. Reflexivity: $x \leq x$.
>> b. Transitivity: $[(x \leq y) \text{ and } (y \leq z)] \rightarrow (x \leq z)]$.
>> c. Antisymmetry: $[(x \leq y) \text{ and } (y \leq x)] \rightarrow (x = y)]$.
>
> Antisymmetry is what distinguishes order from equivalence, and what allows us truly to enter the domain of the relation between non- substitutable singularities.[20]

Therefore, time—which is homeomorphic with entropy, i.e. with *order itself*—cannot belong in the unordered, isentropic domain of ontology. It is only in the ordered world of appearance that an entropic temporality emerges, and therefore *where the (ontological) void transduces as (physico-phenomenological) noise.*

Causal sets, or, the ontology of entropy

Orderliness, then, mobilises the frozen time of ontology, opening the possibility of thinking an entropic temporality: the crucial thing is that it can do so *within the language of set theory*. What this means is that, in order to think the temporalising passage of the void to noise and entropy, we might not have to enter (yet) the slightly alien territories of 'complexity theory', as Hallward reckons.

Albeit entirely speculative, the notion of a temporality *consistent* with set theory, could nevertheless find its scientific conditioning in what is known as the *Causal Set*

---

20 Badiou, LW p. 158.

hypothesis, part of the recent theoretical explorations in search of a theory of quantum gravity.

Its main developer and proponent is physicist Rafael Sorkin, who introduced the concept in a collaborative paper in 1987, proposing 'that space-time at the smallest scales is in reality a causal set: a locally finite set of elements endowed with a partial order corresponding to the microscopic relation that defines past and future.'[21]

The mathematical framework which causal sets, or causets, give rise to is what Sorkin calls a 'dynamics of sequential growth', wherein 'time is an active process of "becoming" that can be identified with the continual birth of new elements of the causal set'.[22] There is no question of delving into the mathematical intricacies of the theory here—however, its generic 'conceptual simplicity' as Sorkin himself puts it, provides by itself very powerful tools to help us navigate our way out of the timelessness of subtractive ontology into the temporal, noisy oceans of phenomenological appearing, without loosing consistency with our set theoretical grounding:

> [a] causet, to be more precise, is a discrete set of *elements*—the basic spacetime building blocks or "elementary events". But whereas in the continuum, spacetime is described, mathematically speaking, by an elaborate web of relationships among the point-events carrying information about contiguity, about smoothness, and about distances and times, for the elements of a causet the only relational information we have is what mathematicians call a "partial (or quasi-) order"—for some pairs x, y of elements (not for all!) we have the information that x comes before y, or, in other cases, that x comes after y. Physically, you should think of this ordering as a microscopic counterpart of the macroscopic relation of before and after in time: For some events, we know that they take place after certain other events. (The word "causal" comes in because we say that

21 Luca Bombelli et al., 'Space-Time as a Causal Set', *Physical Review Letters* 59:5 (Aug 1987), pp. 521-24 (p. 521).
22 Rafael Sorkin, 'Geometry from order: causal sets', *Einstein Online* 2:1007 (2006) <http://www.einstein-online.info/spotlights/causal_sets@set_language=en.html> [accss. 17 Jun 2019].

an event is later than another event if the latter could exert a causal influence on the former).[23]

As Badiou's logic of appearance implies, it might have sufficed to introduce the notion of order into the unordered sets of ontology to find ourselves in the worlds of appearing. What I am positing then, is that orderliness brings to ontology the temporality that it lacked, hence rendering it into a logic of appearing. The structure of *causets* provides a mathematical framework that can keep notions such as entropy and irreversibility still abstract enough—still desutured from a *physis* that would made it unacceptable in a Badiouian framework—to allow for the possibility of thinking the event and the intervention of the subject.

The void may yet find its most faithful translation to noise within the framework of causets.[24] And even more importantly: allowing the entry of these notions will have made room for constructing a solid foundation from where to think the issue of relationality.

All the same, we still require some sort of *logic* determining the appearance of these relations. Badiou, as we already know, opts for Category Theory as the mathematical inscription for his Greater Logic of Appearance.

Would it be possible, however, to propose an alternative logic, one which could,

---

23 Ibid.

24 'What is remarkable is that this structure alone suffices to reproduce (to a high degree of approximation) everything that we mean by the geometry of spacetime' (Sorkin, ibid); see also Sumati Surya, 'The causal set approach to quantum gravity', *arXiv:1903.11544v1* [gr-qc] (27 Mar 2019), [accss. 17 Jun 2019]. Moreover, entropy is still a crucial building block in the search for a unified theory of quantum gravity—as David Reid explains, 'the laws of black hole mechanics are identical to the laws of thermodynamics. […] In traditional thermodynamics the concept of entropy is best understood in terms of discrete quantum states; not surprisingly, attempts to better understand the reasons for this area identification using classical gravity fail. It is widely expected that only a quantum mechanical approach will produce a satisfactory explanation. For this reason, black hole entropy is an important topic for most approaches to quantum gravity' (David D. Reid, 'Introduction to causal sets: an alternate view of spacetime structure', *arXiv:gr-qc/9909075v1* (22 Sep. 1999), [accss. 17 Jun. 2019]).

first and foremost, provide a direct line from the ontology of the void to the logic of noise? And secondly, is there a logic which could "fix" Badiou's slightly intuitive notion of randomness and chance (as in Brassier's criticism cited earlier)?

After all, Badiou himself accepts that, regarding the appearance of being, there is no reason why a particular logic should be necessarily unique.[25]

7.2. Extempore: a Probabilistic Logic of Appearance

Set-theory ontology and a probabilistic logic of appearance

Noise has been posited throughout this essay as the (phenomenological) *appearance* of the (ontological) void of *being*. However, and probably more interesting, could it be that noise resides at the *hinges* between being and appearing? That it is a *result* of the passage from being to appearing?

For a start, noise, as we saw earlier, is liable to abstract formalisation. If Badiou's ontology establishes that the void can be inscribed as a *matheme* (the mark $\emptyset$) noise too, can be mathematically (i.e. ontologically) thought within the formalised framework of *information entropy*.

Noise and the void share an important trait: they can only be grasped *subtractively*. The overall (speculative) relation between set theory and probabilistic logic could schematically be illustrated thus:

25 See Badiou, BO p. 67.

set theory	<=>	probabilistic logic
counting-for-one amounts to the *operation* of one*ness*: it does not deploy the being of the one: it structures presentation and representation.		the one equals *maximum certainty*, it is an operator which presents the result of *choice*, structured by chance.
once an element is counted, it passes on to *knowledge*		once there is a result of 1, it passes on to *information*, on the side of the *message*.
each and every element is a result of a count-for-one (though some elements' elements may not).		each and every element carries, from an original binary (probabilistic) choice 0/1, the mark of a 1 (a confirmed outcome).
the void is the proper name of being; pure inconsistency: ∅		0 names the impossible; maximum uncertainty: ∞

A notable aspect emerging here is that maximum uncertainty (indexed by the void, ∅) can be marked with ∞. Unsurprisingly so, we can perceive that noise emerges in the hinges between the void and the infinite.

one*ness*   <=>   maximum certainty

knowledge   <=>   information

count-for-one <=>   confirmed outcome

the void ∅   <=>   maximum uncertainty (noise) → ∞

A noisy logic of knowing

The important point to make is that probabilistic logic, which belongs to the

mathematical ontologisation of Shannon et al. (in turn, principal condition of Malaspina's thought) does comply with Badiou's conditions for a "proper" Logic: '[l]et logic be what makes the science of appearing *an intrinsic dimension of Being*. On the other hand, let mathematics be the science of Being *qua* Being.'[26]

> Logic should first and foremost be a mathematical thought of what a universe of relations is; or of what a possible situation of Being is, insofar as it is thought in its relational coherence; or of what Being-there is, as the connected essence of Being's ineluctable localization.[27]

For Badiou, 'there is no reason why logic, which is the thought of appearing, should be unique. The linkage form of appearing, which is the manifestation of the "there" of Being-there, is itself a manifold.'[28] In other words, Badiou allows for the possibility that multiple logics articulate the appearance of beings in a world: it seems theoretically possible, then, to complement Badiou's (Category-based) Logic with a Probabilistic Logic without committing any inconsistency.[29]

However, would a probabilistic logic still remain a logic of *appearing*? (i.e. tending towards a Badiouian *phenomenology*)? It might seem that the inclusion of this element, *information*, might befoul the whole project with the stench of *epistemology*. That being said—and in order to keep the discourse consistent with Malaspina—I will posit that it would be something like a logic of *knowing*, and hence tending towards a *noisy epistemology*:

26 Badiou, BO pp. 163-64.
27 Badiou, BO p. 165.
28 Badiou, BO p. 167.
29 Indispensable bridges connecting Category theory and Probability theory are currently being constructed; see for example: Alex Simpson, 'Probability Sheaves and the Giry Monad' <https://coalg.org/mfps-calco2017/calco-papers/calco2017-1.pdf>[accss. 19 Apr 2019];
Prakash Panangaden, 'Probabilistic Relations' <http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=E39D8A51591B67D26ADBDFFFDBD05E0A?doi=10.1.1.52.4840&rep=rep1&type=pdf>[accss. 19 Apr. 2019]; David Mumford, 'The Dawning of the Age of Stochasticity', *Mathematics: Frontiers and Perspectives* (proceedings, 2000), pp. 197-218.

set theory (*ontology, being*)

category theory (*logic of appearing*)   information theory (*logic of knowing*)

As we can gauge from the above diagram, this model requires that we supplement set theory (ontology) and category theory (onto-logy) with a mathematical probabilistic logic. Considering that this "logic of knowing" will have been conditioned by information theory, it will have to be the probabilistic formalisation utilised by Shannon et al., viz. *statistical mechanics.*

The heart of the matter lies here in the hinge between the notions of *impossibility* and *improbability*. Which is something that, of course, pertains to the appearing of the (impossible, improbable) event *and*—this is crucial—to the fact that the latter's truth depends on a subjective trajectory imbued with randomness and noise—therefore, subject to irreversibility and temporality—viz., subject to the laws of thermodynamics.

And ultimately, the fact that 'probabilistic notions are needed to make sense of statistical mechanics', is due to the fact that 'the second law of thermodynamics, which in its original formulation says that certain processes are impossible, must, on the kinetic theory, be replaced by a weaker formulation according to which what the original version deems impossible is merely improbable' but, most importantly,

> in asking about the status of probabilities in statistical mechanics, the familiar dichotomy between epistemic probabilities (credences, or degrees of belief) and ontic (physical) probabilities is insufficient; the concept of probability that is best suited to the needs of statistical mechanics is one that combines epistemic and physical considerations.[30]

---

30 Wayne C. Myrvold, 'Probabilities in Statistical Mechanics', *The Oxford Handbook of Probability and Philosophy*, ed. by Christopher Hitchcock & Alan Hájek (Oxford: Oxford University Press: 2016) pp. 573-600, doi: 10.1093/oxfordhb/9780199607617.013.26.

All of this points to a divided notion of probability, viz. an epistemic notion relating to the degrees of belief, and an *aleatoric* notion which 'attributes probabilities to events in the world, such as the toss of a coin, which they are thought to possess independently of our knowledge or belief'.[31]

So, which notion is in operation in the concept of noise-as-uncertainty that I am proposing here? *Belief* or *ontic*? My wager is that the notion of noise-inside alluded to earlier (and, as we know, akin to Malaspina's 'mental state of noise') somehow delivers an Alexandrian blow to the Gordian knot tying determinism, chance and subjectivity.

My position in this respect, which—I want to think—harmonises Badiou's and Malaspina's, does not pretend to enter the highly technical fields known as *Statistical Relational Learning*, the research of which is focused on Machine Learning and Artificial Intelligence[32]—what needs to be maintained is the stress on the *noisy* epistemology: a noisy logic of knowing, stationed at the constantly trespassed, perpetually moving, borders of knowledge. A *knowledge* (or *information*, in Malaspina's terms) always already prone to being noisily punctured by some truth.

7.3. Education, or, the Return of Relation

Noise, or, the rogue object of relation

31 Ibid.

32 The field of Statistical Relational Learning has been growing since the pioneering work of Lise Getoor, Nir Friedman and others, see for example: Nir Friedman et al., 'Learning Probabilistic Relational Models', *Proceedings of the Sixteenth International Joint Conference on Artificial Intelligence, IJCAI-99* (Stockholm: August 1999); Lise Getoor & Ben Taskar (eds.), *Introduction to Statistical Relational Learning*, (Cambridge, MA: MIT Press, 2007); Lise Getoor et al., 'Probabilistic Relational Models', ibid. pp. 129-74; Hassan Khosravi & Bahareh Bina, 'A Survey on Statistical Relational Learning', *Advances in Artificial Intelligence*, ed. by Atefeh Farzindar & Vlado Kešelj (Berlin & Heidelberg: Springer-Verlag 2010) pp. 256-68; Mathias Verbeke, 'Statistical Relational Learning of Natural Language' (unpublished PhD thesis, KU Leuven, Faculty of Engineering, 2014).

Noise touches on the artistic (Kane, Cox, Hainge et al.), on the scientific (Malaspina), on the political (Goodman, Attali),[33] and on love (Lacan, Reik, Didier-Weill, Quignard):[34] noise seems to be able to in-filtrate (or rather inter-filtrate) through the conditions of thought, exactly in the manner which was required earlier on for the Subject of Education: Noise, itself un-definable and void, is a blind spot that can only be circled around by language/thought, a primordial nakedness which we have conceptually wrapped—as excess, as symptom, as differ*a*nce, as virtuality, as event and so on—and that, precisely because of its void*ness*, passes through the walls of all possible subjectivities.

Noise is the turmoil produced by the passing of what Levi Bryant calls a 'rogue object.'[35] Hence, relations are made and remade in its passing. Noise, as this inter-subjective movement, becomes the phantasmatic *being* of relationality (as Hainge would want it to be) through the *appearing* (or *existence*) of its movement.

Noise, as the first ever subjective resonance of the ontological void, is what forces the logic of education: an education *by* truths, and an education *in* noise.

Education is *noise, education* is *relation*

If Serres, taking an exact opposite view from Badiou, asserts that '[r]elation is creative [and] that relation precedes being'[36], it is Henri Atlan who pushes relationality closer to the idea of an *education in noise* that I have been arguing throughout this essay.

33 See Steve Goodman, *Sonic Warfare: Sound, Affect, and the Ecology of Fear* (Cambridge, MA: MIT Press, 2010).

34 See Theodor Reik, 'The Shofar', *Ritual: Four Psychoanalytic Studies*, trans. by Douglas Bryan (New York: Grove Press, 1962) pp. 221-305.

35 Levi Bryant, 'Rogue Objects', *Larval Subjects* (May 2011) <https://larvalsubjects.wordpress.com/2011/05/25/rogue-objects/> [accss. 5 Sept 2018].

36 Michel Serres (interviewed by Peter Hallward), 'The science of relations: an interview', *Angelaki* 8:2 (2003), pp. 227-238 (p. 234).

Thinking of education 'as an echo of the theory of organisation by redundancy and variety' [*l'organisation par redondance et variété*], Atlan engages the question of 'an ethics of relations between theory and practice' [*une éthique des rapports entre théorie et pratique*], seen, respectively, as 'a laxist indifferentiation of the possible [*une indefférenciation laxiste des possibles*] and rigorous differentiation of the complexity of the Real.'[37] What this means is that

> in the infinitely open place of nascent theorisations, all possibles are equivalent. They can all be, a priori, deducible from each other, constituting an immense tautological thought [*une immense pensée tautologique*]—unformulated—, an initial redundancy over which the work of critical formulation, intermediary between theorisation and practice, will have produced its (self?) organising effect.[38]

Atlan projects an education which, albeit starting programmatically in the infant, gradually allows for the 'non-directed learning, characteristic of self-organised systems' to take over. 'In the order of thought, non-directed learning is active within intellectual and artistic enquiries. It permits the integration, ostensibly paradoxical, of the radically new, thus contributing, amongst adults, in the *creation* of culture'.[39]

In this manner, Atlan separates the notion of 'creation' from that of 'transmission'.

7.4. Coda

Might *education*, in the sense that I am trying to elaborate here, be the name of this missing element, *relation*?

---

37 Atlan, *Entre le cristal et la fumée*, pp. 8-9.
38 Ibid.
39 Ibid.

In lieu of a conclusion, I will present here a final conjecture: if it is true that, as Hallward asserts, relation has been foreclosed from modern (continental) critical thought (of which both Badiou and Deleuze, of course are crucial players), could it be so that relation *returns as the Real voice of Education?*

In the end—and seemingly denying any reason to Hallward's anxieties—implied in the above quotes there seems to be something like a return of relation in French thought after all: on one side, Serres' positing of an ontologically-grounded relationality, and on the other Atlan's elaboration on a pedagogical methodology of relations. Hallward, however, is right to be dissatisfied: insofar as they are lacking a notion of Subject, Truth and event, these positions remain (from a Badiouian perspective at least) slightly deficient.

What I argue, then, is that each and every one of these relational scenarios—which, being relational, all imply a temporality of sorts—will always require the supplementation of an event, of a subject and of a truth, *if that relational temporality is ever to emerge as such*. And it is of course Badiou who, with regards to this, points in the right direction: '[s]ince the site is a figure of the instant, since it only appears to disappear, *true duration can only be that of consequences*'.[40]

It is exactly here where an education *by* truths intervenes: *education is precisely the caring of this post-evental duration*; or better still: *education is the tending of the time produced by the subjective investigation of the consequences of the event*.

Such duration, produced by the random, truth-gathering process of the subject opens up the temporal interval wherein education emerges. Being immanently dialogical, education insures that the truth process remains praxial and relational. Noise is both the result and the environment of this inter-subjective movement. And insofar as

---

40 Badiou, LW p. 369 (my emphasis).

noise is the movement of the void (or the void-in-time), the former guarantees that the latter still remains as the *phantasmatic being* of relationality.

Education is unlawful

Education is inter-subjective work: it therefore, makes noise. And as long as this noise keeps its bias on the void, it will always already be indigestible to the state: it will have been intrinsically *value-less*. Such lack of value originates in its *undecidability:* '[t]he undecidable statement is properly valueless, but that is the price that enables it to contravene the laws prescribed by a classical economy.'[41] In other words, this valuelessness is what provides noise with both its power and its freedom (which is the reason why it requires the ethical containment of *unnameability*).

All of which brings us back to the notion of unlawfulness and to the theme of the Socratic corruption of the youth. It is in this sense that Julia Kristeva's 'abjection' resonates once again, insofar as, in all respects,

> [t]he abject is related to perversion. The sense of abjection that I experience is anchored in the superego. The abject is perverse because it neither gives up nor assumes a prohibition, a rule, or a law; but turns them aside, misleads, corrupts; uses them, takes advantage of them, the better to deny them.[42]

Education, then, functions as the pastoral carer mentioned earlier inasmuch as it involves the tending of this abjection that the subject (or, rather, their superego) will inevitably sustain in their continual exposure to the disorder, uncertainty and lawlessness of noise.

41 Badiou, C, p. 114.
42 Kristeva, *Powers of Horror*, p. 15.

Education in *noise*

Education, for it to be a minder of the subject's trajectory with regards to a truth, must make sure that the murmuring of noise is constantly turned "on". In other words: the subjects of an education by truths—not only educators *and* educands, as prescribed by the Freirean canon, but also artistic *works* (as prescribed by Badiou's theory of the artistic subject)—will need to venture beyond the borders of established knowledge and learn how to navigate the edge of the void, dwell at the threshold of noise and face up to the abject uncertainty and anxiety thereof.

Getting used to the hazard—which is no more than a description of courage—and keep going: noise, both inside and outside, must become the natural environment of an education *by* truths.

Noise is the thread which allows us not only to trespass the epistemological borders of individuated fields (education, science, politics, performance), but also to osmotically "filtrate into the subject", so to speak, traversing in either direction from the outside to the inside, from *Umwelt* to *Innenwelt*, and back again.

Improvisation as musical education by noise

But how might all of this speculative configuration actually work out in the practical materiality of the world? Granted, this is a purely theoretical thesis, neither expectant nor deserving of any donation of *practice*—having said that, let us observe something like an abstract case study. Let us take, say, the musical situation and perform our shizductive translations therein.

There are, in fact, only two subjects of truth at work here: *composition* and *improvisation*. Noise itself, as we know, is un-presentable *as such*: therefore, its edge can only be approached, on one side by a repetitive reflexion—the formal algebra of composition—and, on the other side, by an asymptotic approximation—the procedural topology of improvisation. Composition and improvisation name, in their dialectical conjunction, the *foundational* operation bestowing material consistency to the aural elements inhabiting the 'edge of the musical void', i.e. the *threshold of noise.* This is a set including only elements which *minimally* determine any *pure* presentation of consistent sound, elements at the horizon of music—a musicality without musicianship. The subjects of composition and improvisation, exclusive surveyors of such musical evental sites, (in)form music by plucking sound elements from the threshold of noise, and thereupon set the stage for a *musical event* to happen. Such is the setting of a first *normative* (or prescriptive) stage.[43]

Let us now take the particular case of an improvisational situation. An event might therein happen (as we know, everything starts with the event). It is here an illegal, hazardous appearance of the musical void itself. It appears as noise in a fleeting rupture of musicality, and immediately disappears, either in its anomaly, or in its accession to the name "music": an event, as we know, is *dissipative*. Being dissipative, (de)formative, the event—noise—requires some sort of (in)forming: this has to be done by a retroactive act of nomination. Now, if for Badiou, the nomination of the event is always *poetical*, in the case of the musical situation, *nomination is articulated in immanence to its aural materiality*: it is affirmed within the horizon of the musical poetics available to the musical language of the situation. *Naming* the event, as far as the subjects of improvisation are concerned,

---

43 Which is, I maintain, not inconsistent with Ruda's affirmation that 'there is a philosophical act that today has to take the form of the operation of forcing' (*For Badiou*, p. 132).

implies then the material *musical articulation* of any hazardous crack in musicality. Echoes, or traces left by this singularity are presented explicitly in the listening loop of musical thoughts circulating within the improvisational situation.[44] Education intervenes at this point by becoming a resonant topology surrounding the subject's (neg)entropic affirmation—which, from the point of view of the situation, is, as yet, un-imaginable and un-symbolisable: hailing from outside generic musicality, there is absolutely no musicianship (i.e., no *knowledge*) for it. It is, from the point of view of the musical establishment (i.e. from the point of view of the state), noise. This subjective act of nomination involves an impossible inaugural translation of the *ontological* void into *phenomenological* noise. It is the first torsion of (neg)entropy, the turning-on of temporality, the start of subjective labour. Education here amplifies the subject's a-legal *naming* of a new (possible) musical truth, it bolsters the declaration of the musical *existence* of the noise-event. The nature of this first intervention is translational, *schizductive*. Its operation, at the borders of ontology and phenomenology, is liminal.

But for a musical truth to *appear*, the sole material articulation of the resonance of an event is not enough: there needs to be a recognition of its *implicative* nature: how is it changing the musical appearance of the situation? What are the musical consequences? *If* we include this noise in this particular musical situation: *how* does it bring about a new musicality, and with it, a new law—*what* is this new coherence? (Does it imply a *just* musicianship?). A musical education by noise will draw all possible consequences (potentially infinite) from such articulation, filtering an algebra for the collective thinking of a new law which will musically *form* the (up to now) form*less*. Such *in*forming is the negentropic *work* of the musical subject. The nature of this second intervention is *logical*, inasmuch as its trajectory, though indiscernible, implies that the noise-event, undecidable *for* the situation, has been decided and a new musicality is in place. It is,

---

44 Which might, of course, consist of a single performer.

hence, the production of what I have termed *logical noise* and it implies *a second stage in normativity.*

The third intervention requires education to provide a consistency, an organisation, and an ethics of care[45] towards the inevitable anxiety caused by the proximity of the real of noise; education signals an ethical trajectory doubly modulated by, on one channel a register of *courage*, which impels the subject to "keep going" ("don't give up, fail better, get on with it") in spite of the paralysing lack of a law and, on the other, by a register of *justice*, which oversees the construction of a new law, subtracted from any terrorising superego: the Truth of the event itself must remain unnameable. Education thus takes, along with the subject, full responsibility for the latter's breaking of the law (education is a-legal).

Improvisation is never musical communication, but the collective construction of a musical truth; it is never self-expression, but the subjective subtraction of the ego in order to let noise sing in its universal musicality. This subtraction, this 'negative capability' is precisely what becomes *conscientização*, in the Freirean sense.

This brief description—and to connect with what was briefly mentioned in the Preface of his thesis, regarding the practical background radiation present throughout it—whilst a purely theoretical account, is nothing less than a true outline of the actual praxial work conditioning the *Noise of the Oppressed*.

To speak again in purely theoretical terms: the event, in its evanescence is dissipative, entropic; the subject's trajectory is *work*: it thus creates a (neg)entropic temporality and, as such, the subject's labour is form-producing as much as it is noise-producing.

Noise is, first of all, the epistemological shockwaves of the event; the event

45 See Bartlett "Refuse become subject" p. 194.

triggers the subject to affirm it and to therein start work on the affirmation of its consequences; negentropic (form-producing) noise is therein emitted by the work—which is both logical *and* random—of the subject: education is no more than the amplifying, resonant chamber of this logical, (neg)entropic noise. And, to repeat, such noise is itself the *Noise of the Oppressed*.

Closing thoughts

The notion of an 'education *by* truths' such as the one elaborated throughout this thesis—wherein it is translated as an "education *in* noise"—will have redeemed an idea of relationality which seems to have been sacrificed for the sake of subtraction. If Badiou's subtractive position eschews every relation at the ontological level (except, that is, that of *belonging to a set*), by making education and philosophy mutually inclusive, and by temporalising the ontological void through its translation into (phenomeno- *and* epistemo-logical) noise, then such non-relational fault can be repaired. And this I claim without the need to abandon the key subtractive principle that every truth is incommensurable with knowledge. Simply put, an 'education *by* truths', hereby translated as an "education *in* noise", is the philosophical term for *relation*.

Education, as long as it is an education in noise, involves the collective production of a present, of a temporality which is by necessity entropic, non-reversible and therefore relational (which is why, if the void happens to appear in such temporalised situation, it will have to do so as noise).

Granted, the subjects of truth indeed operate in a trajectory that leads them out of *this* world—i.e. out of the world determined by the knowledge and the Law of the

State—and hence one which renders them indifferent to any relation with it: however, this same trajectory—which it is education's sole duty to accompany, contain and *resonate with*—concurrently involves the affirmation and collective composition of a *new* world.

References

Ackerman, Gwen, 'Israel refuses to ban loud music torture' (12 Jan 1998)
<https://www.questia.com/article/1G1-60847881/israel-refuses-to-ban-eloud-music-torture> [accss. 30 Apr 2018]

Agamben, Giorgio, *Language and Death: The Place of Negativity*, trans. by Karen E. Pinkus with Michael Hardt (Minneapolis, MN: University of Minnesota Press, 2006)

___. *The Sacrament of Language: An Archaeology of the Oath*, trans. by Adam Kotsko (Stanford, CA: Stanford University Press, 2011)

Alperson, Philip, 'What Should One Expect from a Philosophy of Music Education?, *The Journal of Aesthetic Education* 25:3 (Autumn, 1991), pp 215-42

Althusser, Louis, *On Ideology*, trans. by Ben Brewster (London & New York: Verso, 2008)

Anderson, Perry, *Consideration on Western Marxism*, (London: Verso, 1976)

Apollodorus, *The Library*, trans. by Sir James George Frazer (Cambridge, MA: Harvard University Press & London: William Heinemann, 1921)

Aquinas, St. Thomas, 'Of Curiosity', *The Summa Theologica*, trans. by Fathers of the English Dominican Province (Cincinatti, O: Benziger Bros., 1947), 2nd part of the 2nd part, Q 167

Araújo Freire, Ana María, 'Notes to the Tenth Letter', *Letters to Cristina: Reflections on My Life and Work*, trans. by Donaldo Macedo with Quilda Macedo & Alexandre Oliveira

(New York & London: Routledge, 1996), pp. 225-27

Archibald, Thomas & Arthur L. Wilson, 'Rethinking Empowerment: Theories of Power and the Potential for Emancipatory Praxis', *Adult Education Research Conference* <http://newprairiepress.org/aerc/2011/papers/3> [accss.. 22 Oct. 2013]

Aristophanes, 'The Knights', *The Birds and Other Plays*, trans. by David Barrett & Alan H. Sommerstein (London: Penguin, 2003)

Aristotle, *Metaphysics: Aristotle in 23 Volumes, Vols. 17 & 18*, trans. by Hugh Tredennick (Cambridge, MA: Harvard University Press & London: William Heinemann, 1989)

___. *Poetics: Aristotle in 23 Volumes, Vol. 23*, trans. by William H. Fyfe (Cambridge, MA: Harvard University Press & London: William Heinemann, 1923)

Aronowitz, Stanley, 'Paulo Freire's Radical Democratic Humanism', *Paulo Freire: A Critical Encounter*, ed. by Peter McLaren & Peter Leonard (London & New York: Routledge, 1993), pp. 8-24

Atkinson, Dennis, 'Pedagogy against the state', *International Journal Of Art & Design Education* 27:3, (2008), pp. 226-240

___. 'Pedagogy of the Event' <https://www.researchgate.net/publication/255583005> [accss. 23 Jun 2017]

___. 'The Event of Learning: Politics and Truth in Art and Art Education' <faeb.com.br> [accss. 2 Nov 2015]

Atlan, Henri, *Entre le cristal et la fumée: Essai sur l'organisation du vivant* (Paris: Éditions du Seuil, 1979)

Attali, Jacques, *Noise: The Political Economy of Music*, trans. by Brian Massumi (Minneapolis, MN: University of Minnesota Press, 1985)

Augustine, *Confessions,* trans. by Albert C. Outler (Philadelphia: Westminster Press, 1955)

Axelos, Kostas, 'Play as the System of Systems', *SubStance* 8:4:25 (1979), pp. 20-24

Badiou, Alain, 'Afterword: Some Replies to a Demanding Friend', *Think Again: Alain Badiou and the Future Of Philosophy*, ed. by Peter Hallward (London & New York: Continuum, 2004), pp. 232-237

___. *Being and Event*, trans. by Oliver Feltham (London & New York: Continuum, 2005)

 ___. *Conditions*, trans. by Steven Corcoran (London & New York: Continuum, 2008)

 ___. *Deleuze: The Clamor of Being*, trans. by Louise Burchill (Minneapolis, MN: University of Minnesota Press, 2000)

___. *Ethics: An Essay on the Understanding of Evil*, trans. Peter Hallward (London & New York: Verso, 2001

___. *Handbook of Inaesthetics*, trans. by Alberto Toscano (Stanford: Stanford University Press, 2005)

___. *Infinite Thought: Truth and the Return to Philosophy*, ed & trans. by Oliver Feltham & Justin Clemens (London & New York: Continuum, 2004)

___. *Logics of Worlds*, trans. Alberto Toscano (London & New York: Continuum, 2009)

___. *Manifesto for Philosophy*, trans. & ed. by Norman Madarasz (Albany: State University of New York Press, 1999)

___. *Metapolitics*, trans. Jason Barker (London & New York: Verso, 2005)

___. *Number and Numbers*, trans. by Robin Mackay (Cambridge: Polity Press, 2008)

___. 'Philosophy as Biography', *The Sympton* 9 (fall 2008)
<http://www.lacan.com/symptom9_articles/badiou19.html> [accss. 8 Apr 2015]

___. *Polemics*, trans. by Steve Corcoran (London & New York: Verso, 2006)

___. 'The flux and the party: in the margins of *Anti-Oedipus*' (1976), *Polygraph* 15:16 (2004), pp. 75-92

___. 'The Lessons of Jacques Rancière: Knowledge and Power after the Storm', *Jacques Rancière: History, Politics, Aesthetics*, ed. by Gabriel Rockhill & Philip Watts (Durham & London: Duke University Press, 2009)

___. *Theoretical Writings*, ed. & trans. by Ray Brassier & Alberto Toscano (London & New York: Continuum, 2004)

___. *Theory Of The Subject*, trans. Bruno Bosteels (London & New York: Continuum, 2009)

___. *Wittgenstein's Antiphilosophy,* trans. by Bruno Bosteels (London & New York: Verso, 2011)

___. 'Destruction, Negation, Subtraction: on Pier Paolo Pasolini', *Lecture at the Art Center College of Design* (Pasadena, 6 Feb. 2007), https://www.lacan.com/badpas.htm [accss. 20th Jul. 2014].

___. 'Afirmative Dialectics: from Logic to Anthropology', *The International Journal of*

Badiou Studies 2.1 (2013), pp. 1-14, https://badioustudiesjournal.org/archive/ [accss. 14 Aug. 2014]

Badiou, Alain & Élisabeth Roudinesco, *Jacques Lacan Past and Present: A Dialogue*, trans. by Jason E. Smith (New York: Columbia University Press, 2014)

Badiou, Alain & Slavoj, Žižek, *Philosophy In The Present*, trans. by Peter Thomas & Alberto Toscano, ed. by Peter Engelmann, (Cambridge: Polity Press, 2009)

Balkam, Stephen, 'What will happen when the internet of things becomes artificially intelligent?' (20 Feb 2015) <https://www.theguardian.com/technology/2015/feb/20/internet-of-things-artificially-intelligent-stephen-hawking-spike-jonze> [accessed 7 Feb 2018]

Barreiro, Julio, 'Educación y concienciación', in *La Educación como Práctica de la Libertad* by Paulo Freire, trans. by Lilién Ronzoni (Montevideo: Tierra Nueva, 1969), pp. 7-19

Bartlett, A. J., *Badiou and Plato: An Education by Truths* (Edinburgh: Edinburgh University Press, 2011)

___. 'Encyclopedia', *The Badiou Dictionary*, ed. by Steven Corcoran (Edinburgh: Edinburgh University Press, 2015), pp.108-10

___. 'Refuse become subject: The educational ethic of Saint Paul', *Badiou Studies* 3:1 (2014), pp. 193-216

Bateson, Gregory, *Steps to an Ecology of Mind* (Chicago & London: The University of Chicago Press, 1972)

Beekes, Robert S. P. w/Lucien van Beek, *Etymological Dictionary of Greek* (Leiden & Boston: Brill, 2010), p. 1614

Bello, Francis, 'The Information Theory', *Fortune* 48:6, pp. 136-58

Benveniste, Émile, *Problems in General Linguistics*, trans. by Mary Elizabeth Meek, (Coral Gables, FL: University of Miami Press, 1971)

___. *Problèmes de linguistique générale II* (Paris, Éditions Gallimard, 1974)

Bergson, Henri, *Time And Free Will: An Essay on the Immediate Data of Consciousness*, trans. by Frank Lubecki Pogson (London: George Allen & Unwin, 1910)

Bernard, Claude, *An Introduction to the Study of Experimental Medicine* (New York: Dover Publications, 1957)

Berwick, Robert C. & Noam Chomsky, 'The Biolinguistic Program: The Current State of its Development', *The Biolinguistic Enterprise: New Perspectives on the Evolution and Nature of the Human Language Faculty*, ed. by Anna Maria Di Sciullo & Cedric Boeckx (Oxford: Oxford University Press, 2011) pp. 19-41

___. *Why Only Us: Language and Evolution* (Cambridge, MA: MIT Press, 2016)

Bloch, Ernst, *The Principle of Hope, Volume 1* (1954), trans. by Neville Plaice, Stephen Plaice & Paul Knight (Cambridge, MA: MIT Press, 1986)

___. *The Spirit of Utopia*, trans. by Anthony A. Nassar (Stanford: Stanford University Press, 2000)

Boal, Augusto, *Legislative Theatre: Using Performance to Make Politics*, trans. by Adrian

Jackson (London and New York: Routledge, 1998)

___. *Teatro del Oprimido 1: Teoria y práctica*, trans. by Graciela Schmilchuk (México DF: Nueva Imagen, 1989)

___. *Theatre of the Oppressed*, trans. by Charles A. and Maria-Odilia Leal McBride & Emily Fryer (London: Pluto Press, 2008)

Bolhuis, Johan et al., 'How Could Language Have Evolved?', *PLoS Biol* 12:8 (August 2014), pp. 1-6, doi.org/10.1371/journal.pbio.1001934

Bombelli, Luca, Joohan Lee, David Meyer & Rafael D. Sorkin, 'Space-Time as a Causal Set', *Physical Review Letters* 59:5 (Aug 1987), pp. 521-24

Born, Max, *Natural Philosophy of Cause and Chance* (Oxford: Oxford University Press, 1949)

Bosteels, Bruno, 'Por una falta de política: Tésis sobre la filosofía de la democracia radical', *Acontecimiento* 17 (1999) <http://grupoacontecimiento.com.ar> [accss. 5 Apr 2013]

___. 'Translator's Introduction', in *Theory Of The Subject*, by Alain Badiou, trans. by Bruno Bosteels (London & New York: Continuum, 2009) pp. vii-xxxvii

Brassier, Ray (interviewed by Bram Ieven) 'Against an Aesthetics of Noise', nY # 2 (2009) <http://www.ny-web.be/transitzone/against-aesthetics-noise.html>[accss. 17 Jan. 2019]

___. 'Genre is Obsolete', *Noise and Capitalism*, ed. by Antony Iles et. al., (Donostia-San Sebastián: Arteleku Audiolab, 2009) pp. 61-71

___. 'Nihil Unbound: Remarks on Subtractive Ontology and Thinking Capitalism', *Think Again: Alain Badiou and the Future Of Philosophy*, ed. by Peter Hallward (London and New York: Continuum, 2004), pp 50-58

___. *Nihil Unbound: Enlightenment and Extinction* (Basingstoke & New York: Palgrave Macmillan, 2007)

Braunstein, Samuel L. & Arun K. Pati, 'Quantum Information Cannot Be Completely Hidden in Correlations: Implications for the Black-Hole Information Paradox', *Physical Review Letters* 98:8 (2007) DOI: 10.1103/PhysRevLett.98.080502

Brillouin, Leon, "The Negentropy Principle of Information," *Journal of Applied Physics* 24:9 (1953), pp. 1152-1163, doi:10.1063/1.1721463

Brown, Norman O., *Life Against Death: The Psychoanalytical Meaning of History*, 2nd edn (Hanover, NH: Wesleyan University Press, 1985)

___. *Apocalypse and/or Metamorphosis* (Berkeley: University of California Press, 1991)

Bryant, Levi, 'A Brief Note on the Virtual', *Larval Subjects* (Aug 2011) <https://larvalsubjects.wordpress.com/2006/08/26/a-brief-note-on-the-virtual/ >[accss. 25 Apr 2018]

___. 'Rogue Objects', *Larval Subjects* (May 2011) <https://larvalsubjects.wordpress.com/ 2011/05/25/rogue-objects/>[accss. 5 Sept 2018]

Buchanan, Ian, 'Schizoanalysis and the Pedagogy of the Oppressed', *Deleuze and Guattari, Politics and Education: For a People-Yet-to-Come*, ed. by Matthew Carlin and Jason Wallin (New York: Bloomsbury, 2014), pp. 1-14

Burke, Edmund, *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful* (New York: P.F. Collier & Son Company, 1909–14), part I, n.7, 'Of the Sublime' <https://www.bartleby.com/24/2/> (2001), [accss. 30 Mar 2018]

Caba, Justin, 'Torture Methods With Sound: How Pure Noise Can Be Used To Break You Psychologically' (2015)<https://www.medicaldaily.com/torture-methods-sound-how-pure-noise-can-be-used-break-you-psychologically-318638>[accss. 30 Apr 2018]

Caillois, Roger, *Man, Play and Games*, trans. by Meyer Barash, (Urbana & Chicago, IL: University Of Illinois Press, 2001)

Calloni, Humberto, 'Diálogos Interdisciplinares Com Paulo Freire E Michel Serres: Contribuições À Educação Ambiental', *Revista Eletrônica do Mestrado em Educação Ambiental* 17 (Jul-Dec 2006) pp. 127-35

___. 'Paulo Freire e Michel Serres: Aproximações na Perspectiva Interdisciplinar num Diálogo a Múltiplas Vozes', (unpublished PhD thesis, Universidade Federal do Rio Grande do Sul, 2002)

Campbell, Edward, *Music After Deleuze* (London: Bloomsbury, 2013)

Campbell, Jeremy, *Grammatical Man: Information, Entropy, Language, and Life* (New York: Simon and Schuster, 1982)

Canguilhem, Georges, *The Normal and the Pathological*, trans by Carolyn R. Fawcett and Robert S. Cohen (New York: Zone Books, 1991)

Carroll, Sean, *The Big Picture: On the Origins of Life, Meaning and the Universe Itself* (London: Oneworld, 2017)

Chiesa, Lorenzo & Frank Ruda, 'The Event of Language As Force of Life', *Angelaki* 16:3 (2010), pp.163-180, DOI: 10.1080/0969725X.2011.621233

Cho, Daniel & Tyson Lewis, 'Education and Event: Thinking Radical Pedagogy in the Era of Standardization', *Studies in Media & Information Literacy Education* 5:2 (2005) <http://www.utpress.utoronto.ca/journal/ejournals/simile> [accss. 11 Jul 2019]

Chomsky, Noam, 'Biolinguistics and the Human Capacity', *Language and Mind*, 3rd edn (Cambridge, MA: MIT Press, 2005)

___. *Cartesian Linguistics: A Chapter in the History of Rationalist Thought*, 3rd edn (Cambridge: Cambridge University Press, 2009)

___. (interviewed by C. J. Polychroniou), 'On the Evolution of Language: A Biolinguistic Perspective' (24 September 2016)<https://chomsky.info/on-the-evolution-of-language-a-biolinguistic-perspective/>[accss. 2 Jul. 17]

___. *Reflections on Language* (New York: Pantheon Books, 1975)

___. 'The Galilean Challenge', *Inference* 3:1 (2017) <https://inference-review.com/article/the-galilean-challenge> [accss. 24 Apr 2017], para. 20

___. *The Minimalist Program: 20th Anniversary Edition* (Cambridge, MA: MIT Press, 2015)

___. *What Kind of Creatures Are We?*, (New York: Columbia University Press, 2016); transcript of the "Dewey Lectures" delivered at Columbia University in the Fall of 2013, originally published in *The Journal of Philosophy*, CX:12 (Dec. 2013), p. 645-700

Clausius, Rudolf, *The Mechanical Theory Of Heat*, trans. by Walter L. Browne (London:

Macmillan, 1879)

___. 'Ueber verschiedene für die Anwendung bequeme Formen der Hauptgleichungen der mechanischen Wärmetheorie (Vorgetragen in der naturforsch. Gesellschaft zu Zürich den 24 April 1865)', *Annalen der Physik und Chemie.* 125:7, pp. 353–400

Clemens, Justin, 'Conditions', *The Badiou Dictionary*, ed. by Steven Corcoran (Edinburgh: Edinburgh University Press, 2015), pp. 67-73

___. 'Letters As The Condition Of Conditions For Alain Badiou', *Communication & Cognition* 36:1&2 (2003), pp. 73-102

Cobb Kreisberg, Jennifer, 'A Globe, Clothing Itself with a Brain', *Wired* (June 1995) <https://www.wired.com/1995/06/teilhard>[accessed 7 Mar 2018]

Cohen, Paul J. & Reuben Hersh, 'Non-Cantorian Set Theory', *Scientific American* 217:6 (December 1967), pp. 104-117

Cornford, Francis Macdonald, *From Religion to Philosophy: A Study of the Origins of Western Speculation*. (New York, NY: Harper & Bros Publishers: 1957)

___. *Principium Sapientiae: The Origins of Greek Philosophical Thought*, (Cambridge: Cambridge University Press, 1952)

Cox, Christoph, 'Sonic Philosophy', *Artpulse* 16:4 (2013) <artpulsemagazine.com> [accss. 28 Jan 2016]

___. 'Sound Art and the Sonic Unconscious', *Organised Sound* 14:1 (2009), pp. 19–26

Cox, David R. & H. D. Miller, *Theory of Stochastic Processes* (London: Chapman and Hall/ CRC Press, 1977)

'Crossing Over', *Encyclopædia Britannica* <https://www.britannica.com/science/crossing-over>[accss. 13 Sept. 2019]

Cruz, Ana L., 'Paulo Freire's Concept of Conscientização', *Paulo Freire's Intellectual Roots: Toward Historicity in Praxis*, ed. by Robert Lake and Tricia Kress (London & New York: Bloomsbury, 2013), pp. 169-182

Csapo, Eric, 'The Politics of the New Music', *Music and the Muses: The Culture of 'Mousikē' in the Classical Athenian City*, ed. by Penelope Murray & Peter Wilson (Oxford: Oxford University Press, 2004), pp. 207-248

Cusick, Suzanne, 'Music as Torture/Music as Weapon', *Trans: Revista Transcultural de Música* 10 (2006) <https://www.sibetrans.com/trans/articulo/152/music-as-torture-music-as-weapon> [accss. 13 Mar 2019]

D'Angour, Armand, 'The New Music—so what's new?', *Rethinking Revolutions Through Ancient Greece*, ed. by Simon Goldhill & Robin Osborne (Cambridge: Cambridge University Press, 2006), pp. 264-83

Darder, 'Reflections on Paulo Freire & Critical Pedagogy Today' <https://youtu.be/vWymsfBKjlU> (15 Jun 2015), [accss. 31 Jul 2017]

___. *Reinventing Paulo Freire: A Pedagogy of Love* (Boulder, CO: Westview Press, 2002).

Dehaene, Stanislas, *The Number Sense: How the Mind Crates Mathematics* (Oxford & New York: Oxford University Press, 1997)

Deleuze, Gilles, *Bergsonism*, trans. by Hugh Tomlinson and Barbara Habberjam (New York: Zone Books, 1991)

___. *Difference and Repetition*, trans. by Paul Patton (London & New York: Bloomsbury Academic, 2014)

___. *Francis Bacon: the Logic of Sensation*, trans. by Daniel W. Smith (London & New York: Continuum, 2003)

Deleuze, Gilles & Felix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. by Brian Massumi (Minneapolis, MN: University of Minnesota Press, 1987)

___. *What is Philosophy?*, trans. by Graham Burchell and Hugh Tomlinson (London: Verso, 1994)

den Heyer, Kent, 'Education as an Affirmative Invention: Alain Badiou and the Purpose of Teaching and Curriculum', *Educational Theory* 59:4 (2009), pp. 441-63

___. (ed.), *Thinking Education Through Alain Badiou* (New York: Wiley-Blackwell, 2010)

den Heyer, Kent & Diane Conrad, 'Using Alain Badiou's Ethic of Truths to Support an 'Eventful' Social Justice Teacher Education Program', *Journal of Curriculum Theorizing* 27:1 (2011), pp. 7-19

Derrida, Jacques, *Of Grammatology*, trans. by Gayatri Chakravorty Spivak (Baltimore, MD: Johns Hopkins University Press, 1974)

Desrosieres, Alain, 'Statistique', *Dictionnaire d'histoire et philosohie des sciences*, 4th edn (Paris: PUF, 2004), pp. 1008-24

Díaz Nafría, José, 'What is Information? A multidimensional concern', *tripleC* 8:1 (2010)

Didier-Weill, Alain, *Invocations: Dionysos, Moïse*, saint Paul et Freud, (Paris: Calmann-

Lévy, 1998)

Dodge, Yadolah (ed.), *The Oxford Dictionary of Statistical Terms* (Oxford: Oxford University Press, 2003)

Dumézil, Georges, *Mythe et épopée 3: Histoires romaines* (Paris: Éditions Gallimard, 1981)

Dupuy, Jean-Pierre, *The Mark of the Sacred*, trans. by M. B. Debevoise (Stanford, CA: Stanford University Press, 2013)

Eddington, Arthur S., *The Nature Of The Physical World* (New York: Macmillan, 1929)

Einstürzende Neubauten, 'Sabrina', *Silence is Sexy* (Potomak, 957052, 2011)

Elliott, David & Marissa Silverman, *Music Matters: A Philosophy of Music Education*, 2nd edn. (Oxford: Oxford University Press, 2015)

Engel, Susan, 'Children's Need to Know: Curiosity in Schools', *Harvard Educational Review* 81:4 (Winter 2011), pp. 625-45

Euripides, 'Bacchae', trans. by William Arrowsmith, *The Complete Greek Tragedies: Euripides V*, ed. by David Grene & Richmond Lattimore, 3rd edn (Chicago & London: The University of Chicago Press, 2013) pp. 19-84

Evans, Dylan, *An Introductory Dictionary of Lacanian Psychoanalysis* (s.l.: Taylor & Francis e-Library, 2006)

Everitt, Brian S. & Anders Skrondal (eds.), *The Cambridge Dictionary of Statistics*, 4th edn (Cambridge: Cambridge University Press, 2004)

Fanon, Frantz, *Los Condenados de la Tierra* (México DF: Fondo de Cultura Económica,

1963)

Faveri, Jose Ernesto, *Alvaro Vieira Pinto: Contribuiçoes à Educação Libertadora de Paulo Freire* (São Paulo: Liberars, 2014)

Fraser, Olivia Lucca, 'Forcing', *The Badiou Dictionary*, ed. by Steven Corcoran (Edinburgh: Edinburgh University Press, 2015), pp. 136-40

___. 'Nothingness & Event' (2009) (Unpublished manuscript)<academia.edu> [accss. 20/01/13]

___. 'The Law of The Subject: Alain Badiou, Luitzen Brouwer and The Kripkean Analyses of Forcing and The Heyting Calculus', *Cosmos and History* 2:1-2 (2006), pp. 94-133

___. 'Void', *The Badiou Dictionary*, ed. by Steven Corcoran (Edinburgh: Edinburgh University Press, 2015), pp. 377-80

Freire, Paulo, *Ação cultural para a liberdade*, 5th edn (Rio de Janeiro: Paz e Terra, 1981)

___. 'A Conversation with Paulo Freire', *literacy.org* (30 Dec 2009) <https://youtu.be/aFWjnkFypFA> [accss. 19 Jun 2017], 2'05"-2'40"

___. *À sombra desta mangueira* (São Paulo: Olho D'água, 1995); Eng: *Pedagogy of the Heart*, trans. by Donaldo Macedo & Alexandre Oliveira (New York: Continuum, 2000)

___. *Cartas A Cristina: Reflexões Sobre Minha Vida e Minha Práxis* (São Paulo: Paz e Terra, 1994); Sp.: *Cartas A Cristina: Reflexiones sobre mi vida y mi trabajo*, trans. by Stella Mastrángelo & Claudio Tavares Mastrángelo, 3rd edn (México, D.F.: Siglo XXI, 2008); Eng.: *Letters to Cristina: Reflections on My Life and Work*, trans. by Donaldo Macedo with

Quilda Macedo & Alexandre Oliveira (New York & London: Routledge, 1996)

___. *Conscientização: Teoria e Prática da Libertação, Uma Introdução ao Pensamento de Paulo Freire* (São Paulo: Cortez & Moraes, 1979)

___. *Cultural Action for Freedom* (Harvard: Harvard Educational Review, 2000)

___. *Educación y cambio*, (Buenos Aires: Búsqueda-Celadec, 1976)

___. *Education for Critical Consciousness* (London & New York: Continuum, 2005)

___. *Extensión o Comunicación? La concientización en el medio rural* (México D.F.: Siglo XXI, 1984)

___. 'Paulo Freire: "Eu quero ser reinventado"', *Psicologia Atual* 3:13 (1980), pp. 14-17

___. *Pedagogia da Autonomia: Saberes Necessários à Prática Educativa*, 55th edn (Rio de Janeiro & São Paulo: Paz e Terra, 2017); Eng.: *Pedagogy of Freedom: Ethics, Democracy, and Civic Courage*, trans. by Patrick Clarke, (Maryland, MD: Rowman & Littlefield, 1998)

___. *Pedagogia da Esperança: Um Reencontro Com a Pedagogia do Oprimido*, 23rd edn (Rio de Janeiro & São Paulo: Paz e Terra, 2016)

___. *Pedagogia do Oprimido*, 63rd edn (Rio de Janeiro & São Paulo: Paz e Terra, 2017), Eng.: *Pedagogy of the Oppressed*, trans. by Myra Bergman Ramos (New York & London: Continuum, 2005); *Pedagogía del Oprimido*, trans. by Jorge Mellado (Montevideo, Tierra Nueva, 1970)

___. 'Reading the World and Reading the Word: An Interview with Paulo Freire', *Language Arts* 62:1 (1985), pp. 15–21

___. *The politics of education: culture, power and liberation*, trans. by Donaldo Macedo (Basingstoke: Macmillan, 1985)

Freire, Paulo & Antonio Faundez, *Por uma pedagogia da pergunta*, (Rio de Janeiro: Paz e Terra, 1985); Sp.: *Por una Pedagogía de la Pregunta: crítica a una educación basada en respuestas a preguntas inexistentes*, trans Clara Berenguer (Buenos Aires: Siglo XXI, 2013).

Freire, Paulo & Ira Shor, 'What is the "Dialogical Method" of Teaching?', *Journal of education* 169:3 (1987), pp. 11-31

Freire, Paulo & Rex Davis, 'Education for Awareness: a Talk with Paulo Freire', *Literacy and Revolution: the Pedagogy of Paulo Freire*, ed. by Robert Mackie (New York: Continuum, 1981), pp. 57-69

Freud, Sigmund, *Beyond the Pleasure Principle*, translated & ed. by James Strachey (New York & London, W. W. Norton, 1961)

___. 'The "Uncanny"', *The Penguin Freud Library, Vol. 14: Art And Literature: Jensen's 'Gradiva', Leonardo Da Vinci And Other Works*, trans. by James Strachey, ed. by Albert Jackson (Harmondsworth: Penguin, 1990) pp. 335-76

Friedman, Nir, et al., 'Learning Probabilistic Relational Models', *Proceedings of the Sixteenth International Joint Conference on Artificial Intelligence, IJCAI-99* (Stockholm: August 1999)

Furter, Pierre, *Educação e Vida* (Petrópolis, RJ: Vozes, 1966)

G.W.F. Hegel, *Philosophy of Right*, trans. by S.W Dyde (Kitchener: Batoche Books, 2001) p. 20..

Gadotti, Moacir, *Paulo Freire: uma biobibliografia* (São Paulo: Cortez Editora & Instituto Paulo Freire, 1996)

___. *Reading Paulo Freire: His Life and Work* (New York: State University of New York Press, 1994)

Geere, Duncan, 'White, pink, blue and violet: The colours of noise', *Wired* (7 Apr 2011) <http://www.wired.co.uk/article/colours-of-noise> [accss. 9 May 2018]

Gell-Mann, Murray, *The Quark and the Jaguar* (London: Abacus, 1994

Getoor, Lise & Ben Taskar (eds.), *Introduction to Statistical Relational Learning*, (Cambridge, MA: MIT Press, 2007)

Getoor, Lise et al., 'Probabilistic Relational Models', *Introduction to Statistical Relational Learning*, ed. by Lise Getoor & Ben Taskar (Cambridge, MA: MIT Press, 2007), pp. 129-74

Gibson, Andrew, 'Badiou and Beckett: Actual Infinity, Event, Remainder', *Polygraph* 17 (2005), pp. 175-203

Girard, René, *Violence and the Sacred* (London: Bloomsbury, 2013)

Giroux, Henry, 'Prologue: The Fruit of Freire's Roots', *Paulo Freire's Intellectual Roots: Toward Historicity in Praxis*, ed. by Robert Lake & Tricia Kress (London & New York: Bloomsbury, 2013), pp. ix-xxi

Grigg, Russell, *Lacan, Language, and Philosophy* (Albany, NY: State University Of New York Press, 2008)

Gontijo Flores, Guilherme, 'Caos Hesiódico: Agonia Cosmogônica Do Mistério', *Revista Eletrônica de Estudos Literários*, 1:5:5 (2009), www.portaldepublicacoes.ufes.br/reel/article/download/3543/2811 [accss. 19 Apr. 2018]

Gross, Charles G., 'Claude Bernard and the constancy of the internal environment', *Neuroscientist* 4:5 (1998), pp. 380–385

Guilherme, Alex, 'Michel Serres' Le Parasite and Martin Buber's I and Thou: Noise in Informal Education Affecting Dialogue Between Communities in Conflict in the Middle East', *Educational Philosophy and Theory* 47:10 (2015), pp. 1052-1068

Hainge, Greg, *Noise Matters: Towards an Ontology of Noise* (New York, NY: Bloomsbury, 2013)

Halliwell, Stephen, 'Plato', *The Routledge Companion to Philosophy and Music*, ed. by Theodore Gracyk & Andrew Kania (Abingdon: Routledge, 2011), pp. 307-316

Hallward Peter, *Badiou: A Subject to Truth* (Minneapolis: University of Minnesota Press, 2003)

___. *Out of This World: Deleuze and the Philosophy of Creation* (London: Verso, 2006)

___. 'Introduction', *Ethics: An Essay on the Understanding of Evil*, by Alain Badiou, trans. by Peter Hallward (London & New York: Verso, 2001), pp. vii-lvii.

___. 'Introduction: Consequences of Abstraction', *Think Again: Alain Badiou and the Future of Philosophy*, ed. Peter Hallward, (London: Continuum, 2004), pp. 1-20

___. 'The One or The Other: French philosophy today', *Angelaki*, 8:2 (August 2003) pp. 1-32

Hamilton, John T., 'Torture as an Instrument of Music', *Thresholds of Listening: Sound, Technics, Space*, ed. by S. van Maas (New York: Fordham University Press, 201), pp. 143–52

Harari, Josue V. & David F. Bell, 'Introduction: Journal a plusieurs voies', in *Hermes: Literature, Science, Philosophy* by Michel Serres, ed. by Josue V. Harari & David F. Bell (Baltimore & London: The Johns Hopkins University Press, 1982), pp. ix-xl

Hauser, Marc D., Noam Chomsky & W. Tecumseh Fitch, 'The Faculty of Language: What Is It, Who Has It, and How Did It Evolve?', *Science* 298:5598 (22 Nov. 2002), pp. 1569-1579, doi: 10.1126/science.298.5598.1569

He, Temple & Salman Habib 'Chaos and Noise', *arXiv:1211.4667v1 [nlin.CD]* (2012), [accss. 22 Apr 2018]

Hegarty, Paul, 'Noise', *Grove Music Online* (2016) <http://www.oxfordmusiconline.com/grovemusic/view/10.1093/gmo/9781561592630.001.0001/omo-9781561592630-e-1002292545> [accss. 2 May 2018]

Heidegger, Martin, *Basic Writings*, trans by David Farrell Krell (London: Routledge, 1993)

___. *Contributions to Philosophy (From Enowning)*, trans. by Parvis Emad and Kenneth Maly (Bloomington, IN: Indiana University Press, 1999)

Henderson, Isobel, 'Ancient and Oriental Music', *Ancient Greek Music*, ed. by Egon Wellesz (Oxford: Oxford University Press, 1957), pp. 336–403

Henshilwood, Christopher & Francesco d'Errico (eds), *Homo symbolicus: The dawn of*

language, imagination and spirituality (Amsterdam & Philadelphia: John Benjamins Publishing Company, 2011).

Henshilwood, Christopher S. et al., 'Emergence of Modern Human Behavior: Middle Stone Age Engravings from South Africa', *Science* 295, pp.1278-80 (2002), DOI: 10.1126/science.1067575

Hesiod, *Theogony*, trans. with an introduction by Norman O. Brown (New Jersey: Prentice Hall, 1953)

___. *Theogony*, ed. with prolegomena & commentary by Martin Litchfield West (Oxford: Clarendon Press, 1966)

___. *Theogony and Works and Days*, trans. by Martin Litchfield West (Oxford & New York: Oxford University Press, 1988)

Hobbes, Thomas, *Hobbes's Leviathan* (Oxford: Oxford University Press, 1909)

Homer, *Odyssey*, trans. by A.T. Murray (Cambridge, MA: Harvard University Press & London: William Heinemann, 1919)

Huizinga, Johan, *Homo Ludens: A Study of the Play-Element in Culture* (London, Boston and Henley: Routledge & Kegan Paul, 1949)

'Iraq: Torture not isolated: independent investigations vital', *Amnesty International*, (30 Apr 2004) <https://web.archive.org/web/20071013143507/http://web.amnesty.org/library/index/engmde140172004>[accss. 30 Apr 2018]

Irwin, Jones, *Paulo Freire's Philosophy of Education: Origins, Developments, Impacts and Legacies*

(London & New York: Continuum, 2012)

Jakobson, Roman, *Selected Writings II: Word and Language*, (The Hague: Mouton, 1971)

Jameson, Fredric, *Marxism and Form* (Princeton: Princeton University Press, 1971)

Jirout, Jamie & David Klahr, 'Children's scientific curiosity: In search of an operational definition of an elusive concept', *Developmental Review* 32 (2012), pp. 125–160

Jonson, Ben, 'A Masque of the Metamorphos'd Gypsies', *Works in Six Volumes: Volume 5* (London: J. Walthoe, 1716) pp. 374-417

Kaplan, Daniel & Leon Glass, 'Direct Test for Determinism in a Time Series', *Physical Review Letters* 68:4 (1992), pp. 427-30

Keats, John, 'Ode on a Grecia Urn', *The Oxford Book of English Verse*, ed. by Arthur Thomas Quiller-Couch, (Oxford: Clarendon, 1919), pp. 729-30

Kerényi, Karl, *Hermes: Guide of Souls*, (Putnam, CT: Spring Publications, 1976)

Khan, Douglas, *Noise, Water Meat* (Cambridge, MA: MIT Press, 1999)

Khosravi, Hassan & Bahareh Bina, 'A Survey on Statistical Relational Learning', *Advances in Artificial Intelligence*, ed. by Atefeh Farzindar & Vlado Kešelj (Berlin & Heidelberg: Springer-Verlag 2010) pp. 256-68

Kirk, Geoffrey S. & J. E. Raven, *The Presocratic Philosophers: A Critical History With A Selection Of Texts* (Cambridge: Cambridge University Press, 1957)

Kline, Morris, *Mathematical Thought from Ancient to Modern Times, Volume 3* (New York & Oxford: Oxford University Press, 1972)

Koopman, Constantijn, 'Music Education: Aesthetic or "Praxial"?', *The Journal of Aesthetic Education* 32:3 (Autumn, 1998), pp. 1-17

Kristeva, Julia, *Powers of Horror: An Essay on Abjection*, trans. by Leon S. Roudiez (New York: Columbia University Press, 1982)

Gatlin, Lila L., 'Evolutionary indices', *Proceedings of the Sixth Berkeley Symposium on Mathematical Statistics and Probability, Volume 5: Darwinian, Neo-Darwinian, and non-Darwinian Evolution* (Berkeley, CA: University of California Press, 1972), pp. 277-96

Lacan, Jacques, *Ecrits*, trans. by Bruce Fink in collaboration with Héloïse Fink & Russell Grigg (New York: Norton, 2006)

___. *The Seminar of Jacques Lacan: Book III, The Psychoses 1955-56*, ed. by Jacques-Alain Miller, trans. by Russell Grigg (New York: W. W. Norton & Company, 1993)

___. *The Seminar of Jacques Lacan: Book VII, The Ethics of Psychoanalysis 1959-1960*, ed. by Jacques-Alain Miller, trans. by Dennis Porter (New York: W. W. Norton & Company, 1997)

___. *The Seminar of Jacques Lacan: Book VIII, Transference, 1960-1961*, trans. by Cormac Gallagher<http://www.lacaninireland.com/web/wp-content/uploads/2010/06/THE-SEMINAR-OF-JACQUES-LACAN-VIII-Draft-21.pdf> [accss. 11 Jul 2019]

Langer, Suzanne, *Feeling and Form: A Theory of Art* (New York: Charles Scribner's Sons, 1953)

Latour, Bruno, 'The Enlightenment without the Critique: A Word on Michel Serres' Philosophy', *Royal Institute of Philosophy Lecture Series* 21 (1987), pp. 83–97

Lecercle, Jean-Jacques, *Deleuze and Language* (Basingstoke & NewYork: Palgrave Macmillan, 2002)

Leibniz, Gottfried W., *Principles of Nature and Grace Based on Reason*, trans. by Jonathan Bennett, <http://www.earlymoderntexts.com/assets/pdfs/leibniz1714a.pdf>[accss. 24 Apr 2018]

Lerdahl, Fred & Ray Jackendoff, *A generative theory of tonal music* (Cambridge, MA: MIT Press, 1996)

___. 'The capacity for music: What is it, and what's special about it?', *Cognition* 100 (2006), pp. 33–72

Lévi-Strauss, Claude, *Mythologiques 2: Du miel aux cendres* (Paris: Plon, 2009), epub.

___. *The Naked Man: Mythologies Volume 4*, trans. by John and Doreen Weightman (Chicago, IL: University of Chicago Press, 1981)

Lewis, Tyson, *The Aesthetics of Education: Theatre, Curiosity, and Politics in the Work of Jacques Rancière and Paulo Freire* (New York & London: Continuum, 2012)

___. 'Teaching with Pensive Images: Rethinking Curiosity in Paulo Freire's Pedagogy of the Oppressed', *The Journal of Aesthetic Education* 46:1 (2012), pp. 27-45, doi:10.5406/jaesteduc.46.1.0027

Livingstone, David, *Transhumanism: The History of a Dangerous Idea* (USA: Sabilillah Publications, 2015)

Lucretius, *On the Nature of Things*, trans. by John Selby Watson, (London: George Bell & Sons, 1880)

MacKay, David J. C., *Information Theory, Inference, and Learning Algorithms* (Cambridge: Cambridge University Press, 2003)

Norman Madarasz, 'Introduction', in *Manifesto for Philosophy* by Alain Badiou, trans. & ed. by Norman Madarasz (Albany: State University of New York Press, 1999), pp. 3-23

___. 'O "sujeito científico" no sistema filosófico de A. Badiou: o caso da biolinguística chomskyana', *Veritas* 61:3 (Sep-Dec. 2016), pp. 466-491

Maiello, James Vincent, 'Towards a Praxial Philosophy of Music History Pedagogy', *Journal of Music History Pedagogy* 4:1 (2013), pp. 71-108

Malaspina, Cécile, *An Epistemology of Noise: From Information Entropy to Normative Uncertainty* (London: Bloomsbury Academic, 2018)

Mandelbrot, Benoit B., *The Fractal Geometry of Nature* (New York: W. H. Freeman & Co., 1983)

Martins, Maria Elvira, 'Aproximações conceituais entre as teorias de Jean Piaget e Paulo Freire: senhores de seu tempo', *IX Encontro da Pós-Graduação em Psicologia: modos de produção do conhecimento: desafios das subjetividades*, 2011), pp. 1227-1248

McLaren, Peter, 'Afterword', *Paulo Freire's Intellectual Roots: Toward Historicity in Praxis,* ed. by Robert Lake and Tricia Kress (London & New York: Bloomsbury, 2013), pp. 231-36

McLaren, Peter, & Peter Leonard, 'Editors' Introduction', *Paulo Freire: A Critical Encounter*, ed. by Peter McLaren & Peter Leonard (London & New York: Routledge, 1993), pp. 1-7

Medawar, Peter B., 'Critical Notice', *Mind* LXX (1961), pp. 99–106,

doi:10.1093/mind/LXX.277. 99

Meillassoux, Quentin, *After Finitude: An Essay on the Necessity of Contingency* (London & New York: Bloomsbury Academic, 2008)

Miller, Jacques-Alain, 'Action of the Structure', trans. by Christian Kerslake, rev. by Peter Hallward <http://cahiers.kingston.ac.uk/pdf/cpa9.6.miller.translation.pdf> [accss. 2 Nov 2012]; first pub. as 'Action de la structure', *Cahiers pour l'Analyse* 9:6 (summer 1968), pp. 93-105

___. 'Suture (Elements of the Logic of the Signifier)', trans. by Jacqueline Rose <http://cahiers.kingston.ac.uk/pdf/cpa1.3.miller.translation.pdf> [accss. 10 Oct 2012]; first published as 'La Suture (Éléments de la logique du signifiant)', *Cahiers pour l'Analyse* 1.3 (January 1966), pp. 37-49

Milner, Jean-Claude, *Introduction à une science du language* (Paris: Seuil, 1995)

Morrow, Raymond A. & Carlos Alberto Torres, *Reading Freire and Habermas: Critical Pedagogy and Transformative Social Change* (New York & London: Teachers College Press, 2002)

Mumford, David, 'The Dawning of the Age of Stochasticity', *Mathematics: Frontiers and Perspectives* (proceedings, 2000), pp. 197-218

Murray Schafer, Raymond, *The Soundscape: Our Sonic Environment and the Tuning of the World* (Rochester, VT: Destiny Books, 1994)

Myrvold, Wayne C., 'Probabilities in Statistical Mechanics', *The Oxford Handbook of Probability and Philosophy*, ed. by Christopher Hitchcock & Alan Hájek (Oxford: Oxford

University Press: 2016) pp. 573-600 doi: 10.1093/oxfordhb/9780199607617.013.26

Nietzsche, Friedrich, *Philosophy and Truth: Selections from Nietzsche's Notebooks of the early 1870's*, ed. & trans. by Daniel Breazeale, (New Jersey & London: Humanities Press International, 1990)

Nogueira, Adriano S., 'Prefacio', *Cartas a Cristina: Reflexiones sobre mi vida y mi trabajo*, trans. by Stella Mastrángelo & Claudio Tavares Mastrángelo, 3rd edn (México, DF: Siglo XXI, 2008) pp. 11-15

'Noise', *Federal Standard* 1037C https://www.its.bldrdoc.gov/fs-1037/fs-1037c.htm [accss. 9 May 2018]

Norris, Christopher, 'Fidelity', *The Badiou Dictionary*, ed. by Steven Corcoran (Edinburgh: Edinburgh University Press, 2015), pp. 132-36

Norton, Richard, *Tonality in Western Culture: A Critical and Historical Perspective* (University Park (PA) and London: The Pennsylvania State University Press, 1984)

Núnez, Sandino, 'La educación, la nueva izquierda demagógica y la lógica del mercado', Geopolítica de la Subjetividad, (27 Jan 2012) <http://sandinonunez.blogspot.com/2012/01/la-educacion-la-nueva-izquierda.html> [accss. 28 Jan 2012]

___. *La Vieja Hembra Engañadora; Ensayos Resistentes Sobre el Languaje y el Sujeto* (Montevideo: HUM, 2015)

Panangaden, Prakash, 'Probabilistic Relations' <http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=E39D8A51591B67D26AD

BDFFFDBD05E0A?doi=10.1.1.52.4840&rep=rep1&type=pdf>[accss. 19 Apr. 2019]

Piaget, Jean, *The Origins of Intelligence in Children*, trans. by Margaret Cook (New York: International Universities Press, 1952)

___. *The Psychology of Intelligence*, trans. by Malcolm Piercy & D. E. Berlyne (London & New York: Routledge Classics, 2001)

Plato, *Laws: Plato in Twelve Volumes, Vols. 10 & 11*, trans. by R.G. Bury (Cambridge, MA: Harvard University Press & London: William Heinemann, 1967 & 1968)

___. *Symposium: Plato in Twelve Volumes, Vol. 9*, rans. by Harold N. Fowler (Cambridge, MA: Harvard University Press & London: William Heinemann, 1922)

___. *Theaetus: Plato in Twelve Volumes, Vol. 12*, trans. by Harold N. Fowler (Cambridge, MA, Harvard University Press & London: William Heinemann, 1921)

Poincaré, Henri, 'La Logique et L'intuition dans la Science Mathématique et dans L'enseignement', *L'Enseignement mathematique* 1 (1899), pp. 157-62

___. *Œuvres XI* (Paris: Gauthier-Villars, 1955-1956)

Priemer, Roland, *Introductory Signal Processing* (Singapore, New Jersey and London: World Scientific, 1991)

Prigogine, Ilya (in collaboration with Isabelle Stengers), *The End of Certainty: Time, Chaos and the New Laws of Nature* (New York: The Free Press, 1997)

___. *Is Future Given?* (Singapore: World Scientific, 2003)

Prigogine, Ilya & Isabelle Stengers, *Order Out of Chaos: Man's New Dialogue With Nature*

(New York: Bantam Books, 1984)

Pseudo-Plutarch, 'De Musica', *Plutarch's Morals*, trans. by several hands, rev. by William W. Goodwin (Boston: Little, Brown, & Company; Cambridge: Press of John Wilson & son, 1874)

Quignard, Pascal, *La Haine de la Musique* (Paris: Éditions Calmann-Lévy, 1996); Sp.: *El Odio A La Música: Diez pequeños tratados*, trans. by Pierre Jacomet (Santiago: Andrés Bello, 1998)

Rancière, Jacques, *The Ignorant Schoolmaster: Five Lessons in Intellectual Emancipation*, trans. by Kristin Ross (Stanford: Stanford University Press, 1991)

Ravetti, Martín Gómez et al., 'Distinguishing Noise from Chaos: Objective versus Subjective Criteria Using Horizontal Visibility Graph' *PLoS ONE* 9:9 (2014), e108004, doi:10.1371/journal.pone.0108004 [22 Apr 2018])

Reid, David D., 'Introduction to causal sets: an alternate view of spacetime structure', *arXiv:gr-qc/9909075v1* (22 Sep. 1999), [accss. 17 Jun. 2019]

Reik, Theodor, 'The Shofar', *Ritual: Four Psychoanalytic Studies*, trans. by Douglas Bryan (New York: Grove Press, 1962) pp. 221-305

Rosset, Clément, *L'objet Singulier* (Paris: Éditions de Minuit, 2014)

Rosso, Osvaldo Anibal et al, 'Distinguishing Noise from Chaos', *Physical Review Letters* 99 (2007), pp. 154102_1-4.

Ruda, Frank, 'Subtraction—Undecidable, Indiscernible, Generic, Unnameable', *The Badiou Dictionary*, ed. by Steven Corcoran (Edinburgh: Edinburgh University Press,

2015), pp. 329-37

___. *For Badiou: Idealism without Idealism* (Evanston, IL: Northwestern University Press, 2015)

Sands, Steven & John J. Ratey, 'The Concept of Noise', *Psychiatry* 49:4 (1986), pp. 290–97

Schiller, Friedrich, *The Aesthetical Essays* <https://www.gutenberg.org/files/6798/6798-h/6798-h.htm#link2H_4_0018> [accss. 4 Oct 2019]

Schoenberg, Arnold, *Theory of Harmony*, trans. by Roy E. Carter (Berkeley & Los Angeles: University of California Press, 1978)

Schrödinger, Erwin, *What is Life? The Physical Aspect of the Living Cell & Mind and Matter* (Cambridge: Cambridge University Press, 1967)

Serres, Michel, *Genesis*, trans. by Geneviève James and James Nielson (Ann Arbor, MI: The University Of Michigan Press, 1995)

___. *Hermes: Literature, Science, Philosophy*, ed. by Josue V. Harari & David F. Bell (Baltimore & London: The Johns Hopkins University Press, 1982)

___. *The Five Senses: A Philosophy of Mingled Bodies*, trans. by Margaret Sankey & Peter Cowley (London & New York: Bloomsbury Academic, 2016)

___. *The Parasite* (1980), trans. Lawrence R. Schehr (Minneapolis, MN: University of Minnesota Press, 2007)

___. (interviewed by Peter Hallward), 'The science of relations: an interview', *Angelaki*

8:2 (2003), pp. 227-238

Shannon, Claude E., 'The Mathematical Theory of Communication', *The Mathematical Theory Of Communication*, by Claude E. Shannon & Warren Weaver (Urbana, IL: The University Of Illinois Press, 1964), pp. 29-125

Simpson, Alex, 'Probability Sheaves and the Giry Monad' <https://coalg.org/mfps-calco2017/calco-papers/calco2017-1.pdf>[accss. 19 Apr 2019]

Smith, Steven W., *The Scientist and Engineer's Guide to Digital Signal Processing* (San Diego, CA: California Technical Publishing, 1999)

Sorkin, Rafael, 'Geometry from order: causal sets', *Einstein Online* 2:1007 (2006) <http://www.einstein-online.info/spotlights/causal_sets@set_language=en.html> [accss. 17 Jun 2019]

Steve Goodman, Steve, *Sonic Warfare: Sound, Affect, and the Ecology of Fear* (Cambridge, MA: MIT Press, 2010)

Stiegler, Bernard, *Techniques and Time 1: The Fault of Epimetheus* (Stanford CA: Stanford University Press, 1998)

Stone, James V, *Information Theory: A Tutorial Introduction* (s.l.: Sebtel Press, 2015)

Sun Ra (New York: ESP-Disk ESP1054, 1966)

Surya, Sumati, 'The causal set approach to quantum gravity', *arXiv:1903.11544v1* [gr-qc] (27 Mar 2019), [accss. 17 Jun 2019]

Tattersall, Ian, 'How We Came to be Human', *Scientific American, Special Edition: Becoming*

Human: Evolution and Rise of Intelligence, 16:2 (2006), pp 66-73

___. *Masters of the Planet: the search for our human origins*, (New York: Palgrave Macmillan, 2012)

___. *The Origin Of The Human Capacity* (New York: American Museum Of Natural History, 1998)

Taylor, Paul, *The Texts of Paulo Freire*, (Buckingham & Philadelphia: Open University Press, 1993)

Tho, Tzuchien, 'Category Theory', *The Badiou Dictionary*, ed. by Steven Corcoran (Edinburgh: Edinburgh University Press, 2015), pp. 40-7

Verbeke, Mathias, 'Statistical Relational Learning of Natural Language' (unpublished PhD thesis, KU Leuven, Faculty of Engineering, 2014)

Vidal-Naquet, Pierre, 'Foreword', in *The Masters of Truth in Archaic Greece* by Marcel Detienne (New York: Zone Books, 1996), pp. 7-33

Vieira Pinto, Álvaro, *Ciência e Existência*, 2nd edn. (Rio de Janeiro: Paz e Terra, 1986)

Voelker, Jan, 'Compossibility', *The Badiou Dictionary*, ed. by Steven Corcoran (Edinburgh: Edinburgh University Press, 2015), pp. 66-8

'Watch: Shots reportedly fired, 141 arrested at Dakota Access Pipeline protests', *The Seattle Times* (28 Oct 2016) <https://www.seattletimes.com/seattle-news/environment/live-updates-from-the-dakota-access-pipeline-protests-oct-27>[accss. 24 May 2018]

Weaver, Matthew, 'G20 protesters blasted by sonic cannon', *The Guardian* (25 Sep 2009)<https://www.theguardian.com/world/blog/2009/sep/25/sonic-cannon-g20-pittsburgh>[accss. 24 May 2018]

Weaver, Warren, 'Recent Contributions to the Mathematical Theory of Communication', *The Mathematical Theory Of Communication*, by Claude E. Shannon & Warren Weaver (Urbana, IL: The University Of Illinois Press, 1964), pp. 1-28

Werndl, Charlotte, 'Determinism', *preprint copy* (2016), http://philsci-archive.pitt.edu/id/eprint/12166 [accss 07/01/2021]; published in *The Routledge Companion to Free Will*, ed. by Meghan Griffith, Kevin Timpe & Neil Levy (London & New York: Routledge, 2016), pp. 669-679

___. 'Are Deterministic Descriptions and Indeterministic Descriptions Observationally Equivalent?', *Studies in History and Philosophy of Modern Physics* 40 (2009), pp. 232-42

West, Martin Litchfield, *Ancient Greek Music* (Oxford: Oxford University Press, 1992)

Wiener, Norbert, *Cybernetics: or control and communication in the animal and the machine*, 2nd edn, (Cambridge, MA: The MIT Press, 1961)

___. *The Human Use of Human Beings: Cybernetics and Society* (London: Free Association Books, 1989), p. 17.

Williams, Garnett P., *Chaos Theory Tamed* (Washington, DC: Joseph Henry Press, 1997)

Wishart, Trevor, *On Sonic Art* (Amsterdam: Harwood Academic Publishers, 1996)

Wong, Kate, 'The Morning of the Human Mind', *Scientific American, Special Edition:*

Becoming Human: Evolution and the Rise of Intelligence 16:2 (2006), pp. 74-83

Wood, Alexander, *The Physics of Music*, 6th edn. (Methuen, MA and London: University Paperbacks, 1962)

Wu, Kun Qiong Nan & Tianqi Wu, 'Philosophical Analysis of the Meaning and Nature of Entropy and Negative Entropy Theories', *Complexity* 8769060 (2020), doi.org/10.1155/2020/8769060

Žižek, Slavoj, 'From Purification to Subtraction: Badiou and the Real', *Think Again: Alain Badiou and the Future of Philosophy*, ed. Peter Hallward (London & New York: Continuum, 2004), pp. 165-81

___. 'La Voz y la Diferencia Sexual', trans. by Nieves Soria, *La Voz*, ed. by Guillermo Raíces et. al. (Buenos Aires: EOL, 1997)

___. *The Plague of Fantasies*, (London & New York, Verso, 2008)

___. *Absolute Recoil: Towards a New Foundation of Dialectical Materialism* (London & New York: Verso, 2014)

Zupančič, Alenka, (interviewed by Agon Hamza & Frank Ruda), 'Philosophy or Psychoanalysis? Yes, please!', *Crisis & Critique* 6:1 (2019), pp. 435-53