Composing without requests

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Abstract

Is it possible to compose without making demands on the audience? Is it possible to *compose without requests*? I will try to answer this question by discussing a portfolio of musical compositions and proposing an inventory. The pieces presented are:

- *Pale Blue Dot*, for orchestra (2022, $12' 30''$)
- *Fragments of a lover's discourse*, for string quartet (2020, $10'$)
- *Nessun lamento*, for male voice choir and 'halved' orchestra (2019, $14' 30''$)
- *Rapsodia sognante*, for three guitars (2022, $8'$)
- *Wavy repercussions*, for ensemble (2021, $10' 30''$)
- *Obsession*, for solo violin (2022, $8' 30''$)
- *La réponse est dans la pelote de laine*, for solo clarinet (2022, $6' 30''$)
- *Ta da da, e poco più*, for string quartet (2022, $9'$)

A symbiotic relationship between the portfolio and key concepts animates the whole commentary and shapes the framework within which each piece is presented. The systematisation of the concepts is exposed as an open inventory in the second chapter.

I declare that this thesis is a presentation of original work and I am the sole author.
This work has not previously been presented for an award at this, or any other, University.
All sources are acknowledged as Bibliography.

Preface

Ever since I first learned, as a young student, about the nineteenth-century debate on 'the beautiful in music', a question accompanied me, consciously and unconsciously, for many years to come: is the *message* of music entirely conveyed by the music itself, or does it always rely, in some ways, on extra-musical factors? Can the internal organisation of the compositional material suffice to determine its own message, independently of its grammar? If so, what makes its vocabulary meaningful? If not, to what extent are the extra-musical factors determinant? Do we need to *talk* each time we *compose* something? Can *music be enough*? What are we looking for, when we compose?

I was aware of the complexity of the questions and the numerous stances among composers, semiologists and philosophers, ranging from Molino, Nattiez, Lévi-Strauss to Eco, Roy, Chouvel and others. But I had no hurry to find an answer, nor did I want to give premature responses. I have to admit that I had leaned towards the self-sufficient view, but, to be honest, I did not have any solutions. 'I will just keep watching', I told myself.

Wherever the message – if any – was to be found, it was clear to me that in music, unlike in spoken languages, the relationship between a 'signifier' and a 'signified' had to be highly probabilistic and only partially determinable. Eventually, however, it could still be *promoted* or *discouraged* through compositional processes. So the question was: To what extent? Can music *be enough* to promote its message from scratch? Can music make the semantic process collapse to a narrower, possibly controlled, set of possibilities for a listener?[1] And, to add more complications... *What message* are we referring to? What if we were just in search of an *art of*

[1] Curiously, experiments of a self-determining discourse exist in pure linguistics; see, for instance, H. H. Ørberg, *Lingua Latina Per Se Illustrata* (1983) – a Latin grammar that tries to explain Latin in Latin itself through contextual induction.

'signifiers', without really wanting to force the semantic sphere to collapse in any specific direction? Can *at least that* be accomplished?

The answer to this last question was actually not so hard to find: 'Yes, that can be accomplished'. In theory, music can at least promote its own 'signifiers' through ordinary compositional processes, such as coherence, contextual induction, redundancy, variation, contradiction, etc. – which are all techniques that composers have always been able to manage – and leave the semantic sphere open or undetermined. Given that this goal is achievable, is the search for the semantics of music pointless, or even counterproductive? Is not an 'art of sounds' fascinating enough in its own right? Why should sounds *refer* to something else?

It is very fascinating indeed – almost a dream. But there may be a large obstacle to it, and this was the real point of my concern: *What if the semantic dimension is unavoidable?* What if we are always destined to find meaning, simply because we are surrounded by culture and shaped by our own experiences? What if ignoring this automatic response, as composers, means being *unable to control it*? What if it misleads composers into constantly asking listeners to disregard their own experience and culture, as the only possible precondition for understanding new music? Or worse, what if it leads to ignoring *an entire army of elephants in the room*?

Over time all these questions have evolved and partially shifted, attracting new topics and questions from other disciplines and, more importantly, from composition practice. This commentary is my attempt to explore and share my journey through them.

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This research would not have been possible without the trust and support of my department, particularly my supervisor, Thomas Simaku, and my internal examiner, Martin Suckling, to whom I express my sincerest gratitude. My gratitude goes also to Philippa Boyle, for her constructive criticism of the manuscript. I could not have embarked on this journey without the unwavering support of my family and friends, who placed their warm trust in my work during the most challenging times. I thank them wholeheartedly, and to them I dedicate this commentary.

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Chapter 1

Introduction

1.1 Scope of this commentary

> Writing about music is like dancing about architecture.
>
> — Uncredited maxim

Like many strong sentences that impress easily, the quotation above contains a half-truth and a half-lie. Its popularity probably derives from the half-truth, which warns us that music often involves aspects that cannot be translated into words and constantly escape our centre of discourse. On the other hand, one of its fallacies lies in comparing dancing with writing: human languages require a vocabulary that must be agreed upon in advance, whereas dance does not; we call it a misunderstanding when the vocabularies of two speakers fail to align, but the same can hardly be said of dance, or music, or other arts.[1]

A useful tool in framing music is semiologists' tripartite model, which is based on the knowledge that composers' intentions (the 'poietic' dimension) are distinct and independent from what an audience will draw from listening to their music (the 'aesthetic' dimension).[2] This depicts a different landscape than that of languages, in which there is only a *signifier* and a *signified* about which there should be little disagreement.

[1] Choreography developed its own conventions too, especially during the eighteenth century; these however are not a strict requirement of dance as an art.

[2] The actual terms used in literature span different linguistic doublets, such as *aesthesic*, *aesthetic*, *esthesic*, *esthetic*, and *poetic*, *poietic*, *poiesic*, etc. In this commentary the spellings 'aesthetic' and 'poietic' are preferred.

Nattiez gave a wonderful teaser of this model before presenting it in detail:[3]

> I owe to Molino a striking empirical example, one that he used in one of his first public lectures dealing with conceptions of semiology.
>
> The example takes the form of a literary parlor game, popular in the eighteenth century (though the surrealists would not have scorned it). One plays it by making a statement in the following form: A is to B as X is to Y, with the letters replaced by terms picked at random.
>
> We thus get statements such as:
>
> *The toothbrush is to God as Verdi is to the Italians.*
>
> *Schenkerians are to musicology as flowerpots are to the city of London.*
>
> *Ravel's 'Bolero' is to frogs as safety valves are to confectioners.*
>
> Clearly, these statements are absurd. They are, however, unequivocally in English, like Chomsky's famous 'colorless green ideas'. Even beyond the fact of their Englishness, there is 'something else there' – it would be hard to insist that the phrases make no sense whatsoever. As Molino points out, they are structured on the model of a clear, logical proposition, and because of this we can infinitely draw out the interpretants that could be associated with 'toothbrush' and 'God', or 'Verdi' and 'Italy', – interpretants that, being common to these terms taken two by two, permit us to construct a plausible parallel. For example, one might imagine that God has as much need of a toothbrush as the Italians do of Verdi, or that a toothbrush is an attribute of God, just as the Italians' love of Verdi is a characteristic of their nationality. (I refuse to enter upon a potentially perilous exegesis of the statement about Schenkerians!) Farfetched as these glosses might be, at least they are *possible*.

Molino's parlour game suggests that with music we enter a world of indeterminacy (or *arbitrary determinacy*). This introduction, however, is not an excuse to be vague in the discussion of my portfolio: it is first and foremost a way for me to introduce my musical world, in which the awareness of music's tripartite model is deeply integrated into my compositional methodology. Yet it is also a warning that

[3] Nattiez, 1990 [1987], p. 10.

whenever I write about my music, something will inevitably slip out from under the table.

How I talk about my pieces here differs from what I would normally say in any other context. This commentary not only extensively discusses Molino's and Nattiez's tripartite model, but that model is also developed further in the implications that it has with respect to the musical material and composers' perspectives. This represents the privileged point of view of these pages.

As I will try to show, neither the 'poietic' nor the 'aesthetic' dimension can escape subjectivity. But for our purposes here and now, this means that the 'poietic' dimension (i.e. my account as a composer) cannot be trusted completely. This is why, when I discuss it, I try to focus on its most objective aspects – such as the factual narration of the processes that led me to compose a particular piece, or embrace a particular choice – while I try not to indulge in subjective judgements, or in the belief that what a composer says about their music is any more important than what anyone else may have to say.

While this commentary attempts to discuss a portfolio in detail, it also channels significant energy into answering a research question, which is that of *how to compose without confronting the audience with requests*. Both processes, discussing my portfolio and addressing a research question, clash with my natural tendency to rely very highly on my unconscious mind when I compose. I am hopeful that this friction will only add further interest to the reading.

1.2 The research question

> Is it possible to compose without requests? How can it be done?

Contemporary music is often confined to small and homogeneous groups of listeners. Music semiologists call 'poietics' the language spoken by a composer and 'aesthetics' the language understood by their audience at any given time (Molino, 1990; Nattiez, 1990 [1987]). These two categories have never totally coincided during history, nor have they totally diverged – although they have probably never been as distant as they are today.

Despite the inevitability of a poietics–aesthetics gap, the search for solutions to being understood can broadly be considered as a privileged approach to creativity. Due to the heterogeneous nature of the interlocutor (the audience), this quest is

driven by constant incentives to take into account the numerous layers of artistic fruition, and – most importantly – to try and clarify musically what otherwise would need to be clarified verbally.

Finding solutions to soften the poietics–aesthetics gap is a double-edged endeavour: on the one hand, the composers who attempt to face the challenge are confronted with questions whose answers can teach formative lessons to treasure; on the other hand, by not overloading the fruition process with external influences, a self-explanatory musical discourse can also provide an ideal noise-free testbed, which can help the field of musical composition move forward and improve.

Music that does not need external explanations ultimately asks composers to search for *how to compose without confronting their audience with requests* (either explicit or implicit) concerning how to listen to their music. This first requires them to find the right tools to assess whether a musical discourse is self-explanatory or instead silently requires help from a sociocultural dimension that goes unnoticed, and to assess whether what is being composed truly highlights what it wants to highlight or instead overlooked aspects will eventually take over – or, to put it differently, to make sure that the aesthetic and poietic dimensions of music are taken into account.

'Self-explanatory' per se does not necessarily mean 'purely musical', or 'absolute' – indeed, there are plenty of cases in which non-musical layers constitute a substantial part of a music piece (from the scene of an opera to a simple sung text). Instead, self-explanatory means that the piece (in its entirety) is self-sufficient and provides all the necessary attack points to be understood and enjoyed without any need for additional help.

That said, in pursuing my research I have largely privileged the narrow territory of absolute music, both because doing so allowed me to isolate concepts of interest that are truly specific to the field of musical composition in a strict sense (these can eventually be extended later to more composite scenarios), and because I knew that confining the discussion to pure music would require a high degree of interdisciplinarity in support, and this would grow unboundedly if I also began trespassing out of that narrow territory.

As I have learned, collecting the right tools for the challenge of composing without requests demands a layered approach to composition, one that allows the enrichment of the musical material with diverse decoding keys accessible by

different listeners, simultaneously preserving composers' freedom to experiment and explore the unknown. It also means being able to nurture a rich and layered conceptual universe and integrating the typical composer's inventory with notions borrowed from other fields, such as psychology, music semiology, physics, linguistics, mathematics, and philosophy of art.

One of the goals of this commentary is to naturalise these foreign tools as full citizens into the field of music composition – not so different from the usual musical parameters that are normally taken into account. And, as they are my familiar world when I compose, doing so will also allow me to explain my music properly, which I would otherwise not be able to do as effectively.

1.3 Literature review

The traces on which this research walks are multiple, yet none of them follows the exact same path. The closest attempt to answer a similar question was pursued by Theodor Adorno with his essay 'Vers une musique informelle' (first published in 1961), who in a time that showed little interest in the topic, sought to investigate how music can reach acoustic immediacy.[4] The overall posture of my research is not very distant from Adorno's idea of *informal music* stripped from its ethical stances[5] and overloaded with the more self-centred assumption that I cannot really discuss my music without having first laid down the proper key concepts for the task. In particular some of Adorno's conclusions – such as the need to focus on the specificity of the musical material, to mention one – strongly resonate with

[4] Cf. Adorno, 1992 [1961], p. 271 (with provocative tone): 'Actual acoustic listening may not provide the ultimate in musical criteria, but it is certainly superior to the far-fetched and idiotic commentaries with which scores are often provided nowadays – the more fulsomely, the less they contain that stands in need of commentary.'

[5] Although oriented towards a similar goal, at times Adorno's motivations did not lack axiomatic assumptions or strong moral statements, and both factors might become problematic when the goal is that of building strong foundations. Cf. for instance *ibid.*, p. 283: 'The real social emasculation of the individual, which everyone feels, does not leave the artist unscathed. It is scarcely imaginable that in an age when the individual is so diminished and is conscious of his impotence and apathy, he should feel the same compulsion to produce as did individuals in more heroic epochs. Given the anthropology of the present age, the call for a non-revisionist music is to expect too much. Composers tend to react to it by renouncing any control of their music by their ego. They prefer to drift and to refrain from intervening, in the hope that, as in Cage's *bon mot*, it will be not Webern speaking, but the music itself. Their aim is to transform psychological ego weakness into aesthetic strength.'

several concepts presented here. The two scientific approaches, however, do not always converge. For instance, some of the features seen by serialist composers as 'internal' to the musical material were seen by Adorno as 'external',[6] and therefore as carrying *per se* a negative value; within the framework presented here, instead, that which was criticised by Adorno for being 'external' would be criticised solely for failing to assess its own nature.[7]

Furthermore, probably due to the particular epoch in which the essay was written, Adorno's ideal solution seems to revolve around the single act of emancipating the musical material from superimposed rules, especially those of a mathematical nature,[8] whereas my path revolves around a layered approach to musical composition and making sure that as composers, our mental representation of *what things are* remains always centred around the most salient elements that emerge from a musical discourse – ideally unaffected by biases and stereotypes (which are also *unnoticed* 'external' elements), and unhindered by objective obstacles. These are in fact some of the conditions necessary to avoid having to ask the audience 'verbally'[9] to imagine that things are different from how they can sound.

An attempt to outline some of the 'objective obstacles' mentioned above was made by Ligeti in his paper 'Metamorphoses of Musical Form' (first published in 1960), which, after analysing the foundations of late integral serialism, showed some of the contradictions that can arise from incompatible poietic stances.[10]

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[6] *Ibid.*, p. 277: '... the more urgently the structural arrangements insist through their own shape on their own necessity, the more they become guilty of acquiring contingent matter, external to the composing subject'.

[7] ... Whereas 'externality' would not be a problem *per se* as long as it is recognised as such. As we will see in 'Energy of the musical material' on page 33 (cf. in particular note 61 on page 38), some compositional processes require the rupturing of the internal logic of the musical material, thus confining a 'purely internal' musical discourse to a peculiar scenario with limited use cases. Not everything that does not find an explanation in the musical material however can find one outside, therefore 'non-internal' does not always translate as 'external' (more on this topic in the aforementioned section).

[8] *Ibid.*, p. 269: 'Musicians are usually truants from maths classes; it would be a terrible fate for them to end up in the hands of the maths teacher after all.'

[9] 'Asking' can happen in many ways, such as through programme notes, titles, interviews with composers, or by more implicit means.

[10] Borrowing some concepts developed twelve years earlier in the field of theory of information (Shannon, 1948), Ligeti's paper illustrated how, due to the reduced degrees of freedom, in the attempt to predetermine all musical parameters the control over one parameter can provoke the loss of control of the other parameters, eventually leading to the negation of serialism itself. Cf. Ligeti, 1965 [1960], p. 10: 'Let us take an illuminating analogy: playing with plasticine. The distinct lumps of the various colours gradually become dispersed the more you knead the stuff; the result is a conglomeration in which patches of the colours can still be distinguished,

In the same paper, to explain what he perceived as a lack of gradients in the music of his time ('levelling-out process'), Ligeti also introduced the concepts of 'permeability' and 'musical entropy'. These two notions allowed me to dwell on two other related topics, those of 'forbidden processes' and 'musical energy'.[11]

The former is a complementary extension of Ligeti's idea of 'impermeable layers', whereas the concept of musical energy has a niche but well-established tradition that can be traced as far back as the works of Johann Georg Sulzer and Johann Nikolaus Forkel (1788; 1774).[12] Along with other concepts that will be introduced in the second chapter, these two concepts helped me enrich the inventory of 'what things can be', which in turn can allow us to approximate an answer to 'what things are' in music with higher precision. And, as these two are recurrent topics within my internal music discourse, they also constitute key concepts for discussing my portfolio.

The same question of 'what things are' led me to explore the field of neuroscience, where an experiment carried out in 2004 allowed Stefan Koelsch and his team to shed light on the brain's semantic response to music (Koelsch et al., 2004). That study was important in pinning down the constant and ineluctable presence of a *signified* in music (however indeterminate or unknowable), which in turn allowed me to move towards music's *signifiers* (i.e. the musical material) using a more general model of discourse to approach the salient features of a musical one (cf. 'sonemes', 'aesthemes', 'poiemes', 'field of productivity', and other concepts outlined in the

whereas the whole is characterized by lack of contrast. Knead on, and the little patches of colour disappear in their turn, and give place to a uniform grey. This flattening-out process cannot be reversed. Similar symptoms can be discerned in elementary serial compositions. The postulation of series means, here, that each element should be used with equal frequency and should be given equal importance. This leads irresistably to an increase of entropy. The finer the network of operations with pre-ordered material, the higher the degree of levelling-out in the result. Total, consistent application of the serial principle negates, in the end, serialism itself. There is really no basic difference between the results of automatism and the products of chance; total determinacy comes to be identical with total indeterminacy. This is the place to seek the parallelism (mentioned earlier) between integral-serial music and music governed by chance (John Cage). The following is characteristic of both types: pause—event—pause—event—pause, etc. [However it is perhaps noteworthy that the pauses in Cage's music are generally longer than those in serial structures.]; naturally the events are variously structured and the pauses have different durations but the more differentiated the individual events and caesuras, the more evident becomes the levelling-out process in the result. This is a consequence of the fact that increased differentiation in the separate moments is only possible at the expense of the differentiation of the whole.'

[11] See pp. 23 ff. and 33 ff.

[12] Cf. Riley, 2002, p. 13 (quoted in note 61 on page 38 of this commentary).

second chapter). As I am not a neuroscientist, the semantic dimension and the external references that music can evoke, although fascinating, are purposely left out of this commentary (other than occasional and superficial examples). The *sounds* responsible for these references, however, are an integral part of what is discussed here.

Dwelling on the *signifiers* of music requires a proper framework, and few models are able to describe signs without a vocabulary and cover the different actors involved in a creation–fruition process as effectively music semiologists' tripartite model (Molino, 1990; Nattiez, 1990 [1987]). Adopting such a framework attracted several links with topics that are properly of other fields (especially linguistics and sociolinguistics), and therefore many parallels emerge throughout the entire commentary and its bibliography.

The reasons why my music is built around the awareness of the framework presented here go beyond what I am able to provide. But I am confident that this will ensure that my instinct keeps a posture that is always aligned with my rational mind, allowing me to find further connections with composers who, despite not undertaking the perilous path of writing a commentary, in one way or another have resonated with the same quests. These are mentioned in the various chapters of these pages, and, together with numerous other sources cited in no particular order, can be found in the bibliography.

1.4 Special guests

The audience I have recently been asked[13] who I think about the most when I compose. My answer, in order of importance, was myself, the performers, the audience.

It is striking that the audience did not come even second in the list. And yet here I am saying that composing rich and layered pieces facilitates communication to wider audiences. Why do we bother with audiences then? And when should we bother with them?

As a matter of fact, we should probably not bother with them at all. In the same interview I added something else: 'By character, I am instinctively permeable

[13] Präsent, 2021, p. 39.

to everything that surrounds me – which builds up and accumulates in me – so, unintentionally, the audience does come back strong eventually – but filtered, second hand'.

In my case the audience is therefore an introjected audience, one that usually has little to do with the actual audience that will listen to what I am composing in the moment. That is why, if asked, I would say that we should not be bothered with audiences.

But then what about this introjected voice? Is it possible that every composer has an ideal audience inside them, and the fact that this idealised audience is more or less similar to real-world audiences is what we would call the composer's attitude? In fact, even if we look at composers who explicitly ask the audience to 'disappear', they do have an ideal audience in mind, it is just a silent one.[14]

We can assume that a silenced internal audience will not have much power over a composer, whereas composers who for one reason or another have somehow internalised the complexity of listeners' cognitive grids, their past experience and the society they live in – preserving the complexity of the whole picture – can have a precious perspective to nurture, and, perhaps, an internal drama to solve each time. They can use it as a constant element of reflection, a dialectic pole, a source of richness, which in turn can potentially bear precious fruits in their writing. This dialectic pole, when present, is constant, not related to how layered their intentions are when they compose. They may wish to write a substantial piece or a piece that intentionally follows a small, narrow and focussed idea, and yet the complex internal dialectics will still be there, hard-wired into their dialectic minds.[15]

[14] *Ibid.*, p. 39: 'Sciarrino for example introduced the concept of "listening ecology", whereby he asks the audience to *make an effort* before approaching a new piece, to get rid of all its past cognitive grids and prepare some fresh ears necessary to enjoy the novelty'. In the same interview I add a parallel between Sciarrino's concept and 'the dove in Immanuel Kant's metaphor, which feels the air resistance while flying and thinks "How much faster would I fly if there was no air!"'. The original source was Sciarrino, 2001, p. 249: 'Distinguerei intanto un'ecologia acustica e un'ecologia dell'ascolto; la prima riguarda, è chiaro, qualsiasi ambiente naturale dal punto di vista acustico. La seconda è piuttosto un'angolazione maieutica, segna il cammino individuale che ciascuno di noi può compiere nel pulire la mente; investendo il fenomeno musicale alle sue radici, l'ecologia dell'ascolto torna ad avere conseguenze d'importanza collettiva. Necessario liberare l'orecchio dalle incrostazioni, ripararlo dall'assordamento. Tuttavia sono i condizionamenti a rendere refrattaria la mente, chiusa più di un orecchio sordo. Pulire la mente dunque vuol dire imparare a fare il vuoto dentro, lasciare spazio all'altro che non si conosce.'

[15] Structuralism greatly contributed to the shift of focus from *artists* to *their work*, under the premise that the latter will be accessed by a diverse audience with different backgrounds. This transition is dramatically described by Roland Barthes as 'the death of the author' (Barthes,

The performers Performers are composers' first direct audience and the audience's first direct creators of sound. No words would ever be enough to stress their importance, and I believe that calling them 'interpreters' will always be an understatement. Yet, within the framework of this commentary they virtually play the same role that composers play, in that they contribute to the wider collective poietic dimension of music – while their role as audience, or 'receiver', becomes less relevant for the scope of this work. Hence, often when I refer to 'composers' I implicitly refer to 'composers and performers', and many of the things I say here about composers apply equally to performers.

Only one piece in my portfolio partially attempts to address the performer's role as a 'receiver', and that is *Rapsodia sognante*, for three guitars.[16] Apart from that single digression, performers and composers play the same role here. This is because, from the audience's point of view, composers and performers are the *senders*, and listeners are the *receivers*.

Furthermore, although many of the points addressed concern both composers and performers, *the solutions* discussed here are only confined to the field of musical composition, because this is the only field where I feel comfortable enough to contribute.

1.5 The portfolio

Each piece of my portfolio is diverse in its scope. As I will try to show, a rich and layered musical universe can emerge both when the scope of a piece is already wide and multi-dimensional in its intentions – as often happens in substantial works, pieces that involve a text, etc. – and when the poietic goal is narrow and focussed.

1977 [1967], p. 142): '... writing is the destruction of every voice, of every point of origin. Writing is that neutral, composite, oblique space where our subject slips away, the negative, where all identity is lost, starting with the very identity of the body writing ... As soon as a fact is narrated no longer with a view to acting directly on reality but intransitively, that is to say, finally outside of any function other than that of the very practice of the symbol itself, this disconnection occurs, the voice loses its origin, the author enters into his own death, writing begins'. Personally, I believe that the very fact that an artwork is created to be accessed does partially bring the author back, at least as a limiting factor in the audience who will access the work (e.g., an untranslated Chinese book will not be 'freely accessed' by non-Chinese speakers, it will be simply ignored). That said, the final decision will indeed be in the audience's hands.

[16] See chapter 6.

The first group of pieces in the portfolio all have a multi-dimensional attitude. These are *Pale Blue Dot*, *Fragments of a lover's discourse* and *Nessun lamento*. In a second group with a narrower focus are *Wavy repercussions* and *Ta da da, e poco più*. Somewhere in the middle between the two extremes lie *Rapsodia sognante*, *Obsession* and *La réponse est dans la pelote de laine*.

Before discussing each piece in detail, a chapter is dedicated to the collection of an inventory. This will provide both the tools to analyse the musical material and a general mindset for further investigation.

Chapter 2

An inventory for a toy universe

> The toothbrush is to God as Verdi is to the Italians.
> Schenkerians are to musicology as flowerpots are to the city of London.
> Ravel's 'Bolero' is to frogs as safety valves are to confectioners.
>
> — Jean Molino's parlor game[1]

Is what we compose what we say it is? Does what we compose need an explanation? I will now step into a risky territory. This is not an essay on music psychology or music semiology; yet, the way my creativity works sometimes asks for a walk into those fields. In doing so, my main focus as a composer will not be on the way listeners perceive music, but on what, in music, is perceptible. As a human, however, how listeners perceive music does strike me too.

The goal of this journey is to phenomenologically dissect the creation–fruition process and explore the implications that this has on music composition, with the idea of building a dialectical inventory from what we find useful along the way. While there, we will also need to invent new words and establish a few boundaries.

Fertile semantic targets In 2004, Koelsch et al. carried out a groundbreaking experiment on the brain's semantic response to music using electroencephalography and the semantic priming process.[2] Instead of trying to understand whether music

[1] Quoted in Nattiez, 1990 [1987], p. 10. See p. 2 of this commentary for the full passage.

[2] Cf. Koelsch et al., 2004, p. 302: 'A sentence such as *She sings a song* facilitates the processing of a semantically related word such as *music*, whereas it does not facilitate processing of a semantically unrelated word such as *sock*. This effect is known as the semantic priming effect; it refers to the highly consistent processing advantage seen for words that are preceded by a semantically related context.'

could carry absolutely meaningful information, the authors sought to understand whether music could be perceived as related or unrelated to suggested words, collecting the results by measuring an automatic electrical impulse of the brain.

This experiment not only showed that music could indeed induce semantic information and 'prime the meaning of a word',[3] but it also showed conversely that the production of semantic information could be predicted, to a certain extent, from musicological and compositional hypotheses; and that this is what composers, at least in some cases, have been able to achieve.[4]

If we were able to know in advance which semantic areas a musical material could prime for a listener, and which external stimuli could be perceived as related to the sound, then we could say that we were witnessing music's 'fertile semantic targets'[5] for these listeners.

Fertile semantic targets

The semantic information that for a particular listener can be perceived as related to the musical material that is being listened to.

Unfortunately, such a notion requires an experimental measure to be (only partially) known, and a setup not dissimilar from what Koelsh and his team devised for their experiment. But if we assume that listening to music is never completely neutral to the audience, then *the existence* of fertile semantic targets – whatever these might be – is something that we can reasonably assume is constant. With this in mind,

[3] *Ibid.*, p. 302: 'Our results indicate that both music and language can prime the meaning of a word, and that music can, as language, determine physiological indices of semantic processing.'

[4] *Ibid.*, p. 303: 'One-third of the musical primes used in the ERP experiments been chosen based on self-reports of the composers. For example, the prime for the word *needle* was a passage of Schönberg's *String Terzett* in which he described stitches during his heart attack. The other musical primes had been chosen based on musicological terminology. For example, the prime for the word *narrowness* was an excerpt in which intervals are set in closed position (covering a narrow pitch range in tonal space, and being dissonant), the prime for the word *wideness* was an excerpt in which intervals are set in open position.'

[5] In describing their experiment Koelsch et al. used the term 'target words', because words were employed to deliver semantic information. In our hypothesis however – which is not a plan for a concrete experimental setup – the way external semantic information is delivered becomes idealised; and thus it will not matter whether the targets are words, images, or perfumes, as long as these are semantically charged and external to the music – hence 'semantic targets'. In a concrete experimental setup, however, I believe that words would indeed be highly valuable compared to other more implicit means for delivering semantic information (e.g., images, facial expressions, and so on), because their explicit nature can strongly prevent them from being reinterpreted *a posteriori* under the influence of music (therefore words might be expected to play a more or less unidirectional role).

we can look at the musical material and wonder what might emerge as a 'prime' and generate that automatic response in listeners.[6] To try and answer this we can borrow a concept from linguistics and slowly move away from neuroscience in the direction of music composition.

Sonemes The term 'phone' in linguistics refers to any speech sound regardless of its relevance to the meaning of a word. If, and only if, that sound is able to influence a meaning, it can be called also a 'phoneme'. For instance, the American pronunciation of the consonant 'r' at the end of closed syllables is different from the British pronunciation, to the point that the British completely drop the 'r' and elongate the previous vowel. Yet the word 'part' will mean the same thing independently whether it is pronounced in an American or British accent. Thus, we can say that the sound difference between the American and the British 'r' is phonetic but not phonematic.

On the other hand, if we move away from the 'r' to the point of producing an 's' we will be able to obtain a different meaning ('past'). We would then say that the difference between 'r' and 's' is not only phonetic, but also phonematic.[7]

Music can achieve something similar. A guitar player moving their fingers on the fingerboard, for example, can easily produce a 'slide noise'. Normally this noise will not be perceived as relevant by the listeners, the composer or the performers, though other sounds definitely will be. We can then treasure the lesson learnt from linguistics, create a calque of 'phoneme' and add to the concept of sound the concept of 'soneme'.

> SONEME
>
> *Any sonic element that is perceived as productive by both the composer and one or more listeners.*

[6] As shown by Koelsch et al. (p. 302), a compositional idea can promote fertile semantic targets through either inner 'absolute' elements (intervals, sound, pitches, etc.) or stereotypically-promoted references (historically crystallised musical languages, extra-musical elements, etc.). In both cases, semantic information can emerge either from the short-range units of the material (basic gestures, timbre, vertical construction, etc.) or its long-range constructions (more complex gestures, musical form, etc.).

[7] The concept of phoneme introduces a certain ambiguity. Strictly speaking, no specific sound can truly be a phoneme, and asking whether the consonant 'r' is phonematic in English will immediately lead to the next question, '*Which "r"? the American or the British?*'. What instead can be a phoneme is *a range of sounds* that fall into the same mental representation. In music, such a range is inductively defined by the musical context.

We can now say that the 'slide noise' in the example above is sonic but not sonematic (in most cases), and, as such, it will be filtered out.

The use of the word 'productive' requires clarification. This adjective is another term borrowed from linguistics, where it qualifies processes that are recognised as capable of creating new patterns. For instance, one of the meanings of the English suffix *-ish* is to indicate an approximation when added to an adjective. We are free to create as many words of this class as we want, such as *greenish*, *democratish*, *civilish*, and so on. Accordingly, the process of adding *-ish* is said to be a 'productive' process. For the same reason, a few sentences earlier I used the adjective 'sonematic' without explaining it to the reader, knowing that presenting the substantive 'soneme' would be sufficient.

Productive processes form expandable *open classes*, while non-productive processes form crystallised *closed classes*.[8] Similarly, the class of words ending in *-ish* constitutes an open class, which cannot be counted.

Several linguists consider productivity as lying on a spectrum,[9] in which there are fully productive processes (such as adding an *-s* to form a plural for example) together with semi-productive ones (such as, for instance, adding *-ess* to form female equivalents).[10] It is less common for linguists to focus on the *degree of 'non-productivity'*, though it can be argued that 'closed classes' also lie on a spectrum. In fact, there are non-productive processes whose function is still clearly recognisable (e.g., plurals in *-en*, such as *oxen*, *children*, *brethren*), which form a class that cannot be expanded, whereas there are non-productive processes that have also completely lost any recognisability, to the extent that they have become morphologically obscure.

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[8] Cf. Bauer, 2001, p. 16: 'For Dik a formation ... is fully productive if it applies to an open class of bases and all possible outputs are acceptable to the native speaker ... If the class of bases is closed (that is if we can list the appropriate bases) the formation is non-productive.'

[9] *Ibid.*, pp. 15 et seqq.

[10] Cf. 'semi-productive (process, formation)' in *The Concise Oxford Dictionary of Linguistics* (Matthews, 2007): 'Permitting new combinations of elements, but not with complete freedom. Used especially of processes of word-formation: e.g., it is possible, in principle, to form new nouns like *authoress* from *author* or *deaconess* from *deacon*, but many potential forms, such as *writeress* or *minist(e)ress*, are not used and may not be immediately clear or acceptable.' See also Bauer, 2001, p. 18: : 'Botha (1968: 138–144), noting that many linguists (both within transformational school and outside it) use labels such as "immensely productive", "very productive", "marginal productive", etc., considers how this can be understood within a transformational grammar'.

This phenomenon is sometimes referred to as 'opacity' (or full 'lexicalisation').[11] If we want to avoid delving into the most distant relicts of Proto-Indo-European that have survived in English, a good example might be given by the words formed with the *for-* prefix. This in fact happens to inherit two meanings that are almost the opposite of each other: that of 'away', 'away from', 'wrongly' (related to modern English *from* and Latin *pro-*, 'in front') – found in words like *forgive* ('give away', hence 'release'), *forgo* ('go away', 'leave alone'), *forbear* ('keep away from', 'avoid') – and, on the other hand, the meaning of 'through', 'completely', 'fully' (closer to Latin *per-*, 'very') – found in words like *forcut* ('to cut through', 'to cut completely'), *forsench* ('to cause to sink completely', 'to submerge'), *forblack* ('completely black'), and so on. Because in languages the production of new words happens inductively by imitating similar patterns, it is possible that this ambiguity contributed over time to hampering the recognisability of the function itself that the prefix was supposed to express, thus making it more or less *opaque*.[12] Moreover, if in words like *forgive* at least *the presence* of a prefix might still be more or less recognisable, other fully lexicalised words, like *husband*, offer no clue whatsoever as to their origins as compounds.[13]

In applying this concept to music, I will first define a 'black and white' definition of productivity based on two extremes, whose centre is slightly shifted compared with linguistics: I will define as productive those processes that can be recognised as carriers of reproducible distinctiveness (and can therefore form an open class of similar elements within the musical discourse), whereas I will define as non-productive those processes that for one reason or another do not emerge as distinct, recognisable, parsable – earlier in linguistics we identified those as lying on the extreme spectrum of non-productivity, i.e. opacity – a little like the English prefix

[11] Cf. Fernández-Domínguez, 2010, p. 9: 'One typical attribute of lexicalized words is opacity, and occurs when lexicalization has applied so intensely that it is impossible to distinguish which elements originally constituted the original formation.'

[12] We will discuss a similarly contradictory scenario applied to music in 'Forbidden musical processes' on page 23.

[13] *Ibid.*, p. 9: 'Such is the case of *husband*, cited in the *Oxford English Dictionary* ... as coming from Old English compounding between *hús* ("house") and *bónda*, *bonda*, *bunda* ("peasant owning his own house" and "land, freeholder, franklin, yeoman"). No native speaker of English can guess, by mere observation, that *husband* was formerly a compound, so the lexeme is said to be opaque regarding synchronic morphology.'

hus- in *husband*.[14] A sonic element can thus be considered productive if it is parsed as salient, active, relevant, reusable, by the composer or the audience.[15] It can be safely considered non-productive instead only if it fails to emerge as recognisable at all as a unit distinct from the rest of the sound flow.[16] Once the two extremes have been defined, we can also imagine the spectrum that lies in between.

Like in linguistics, here 'productive' refers to an element's ability to produce similar patterns that will be recognised as alike, as belonging to the same open class within the same piece. The 'short–short–short–long' motif that opens Beethoven's Fifth Symphony (1808) is perhaps the most paradigmatic example of a productive sonic element. A rough synonym of 'productive' – which lacks all the implications discussed here – is 'salient'.

Differently from speech's phonemes, music does not possess fixed sonemes, nor a fixed vocabulary,[17] and makes it rather easy to promote what a moment earlier was a neutral sound into a soneme (individualisation, induction, development, etc.) and vice versa (neutralisation, liquidation, etc.).[18] For example, a performer turning a page during a concert can produce a sound that will likely be ignored. But if that performer started doing it loudly and repetitively enough, or introduced

[14] The centre between productivity and non-productivity is shifted here because unlike in linguistics there are no rules in music that state that a particular element emerging as distinct must necessarily form closed classes, and in principle all recognisable elements in a piece can be parsed as salient by the audience, even if the composer refrains from reusing them. Because of this, only the absence of recognisability can make a process fully qualify as 'non-productive' (whereas in linguistics a non-recognisable process would be called 'non-productive' *and* 'opaque').

[15] As we are dealing with music and not languages, there will inevitably be disagreements between the poietic and aesthetic dimensions – more on this in the next section. See also p. 95 for the concept as applied to my portfolio.

[16] For instance, the thirds that are hidden as composite intervals inside a scale have no higher prominence over the fourths, the fifths, and so on, that are hidden inside the same scale. The surrounding musical discourse however largely influences the audience's final say, because even clearly audible sounds can fail to be parsed as salient if the musical discourse discourages paying attention to them, as we saw in the 'slide noise' in the previous example, and indistinct elements on the other hand can inherit features they intrinsically lack, as we will see on page 28 with an example from Schubert's song 'Ständchen' (Figure 2.3).

[17] Cf. Warren, 2008, p. 32: 'It is no evolutionary accident that we do not use music to prepare a shopping list'.

[18] The Greek *φωνή* and the Latin *sonus* mean the same thing ('sound'), therefore the word 'phoneme' could also be extended to music; however, the lack of a shared vocabulary or a phonematic system in music, together with the fact that 'phoneme' already has a specific accepted meaning in linguistics, has led me to distinguish the term 'soneme' from the linguistic 'phoneme'. The word used in linguistics would also add further complications, like for example the fact that other terms, such as 'toneme', also exist, and they also have their own meanings that are specific to spoken languages.

a perceptible pattern, or if the context favoured it, a page-turning noise could become relevant via induction or contextualisation. The same can also happen on a spectrum and not only along the binary polarisation of sound versus soneme. For instance, in a motif that gradually evolves into neutral scales and slowly loses its characterising intervals, the latter will become non-sonematic at different moments for different listeners, and some listeners will never really stop hearing them even when they are no longer there, much like we can sometimes hear a clock ticking in binary time signature or still hear a sound during the final *chor tacet* in Ligeti's *Lux Aeterna* (apophenia).

For instance, I believe that one of the clearest examples of 'liquidation'[19] happens at the beginning of Béla Bartók's String Quartet No. 2 (1917). There we can ask: *When* did the octaves that the first violin plays in the 17th measure cease being the same melodic figure presented in the second measure by the same instrument (E–A–D–C♯)? *At which point* did that happen?

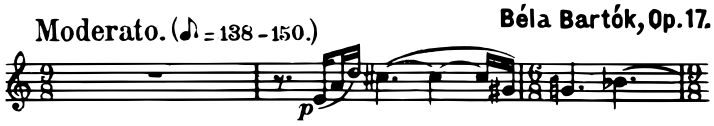

Figure 2.1: Béla Bartók, String Quartet No. 2, Moderato, 1st violin, mm. 1–3.

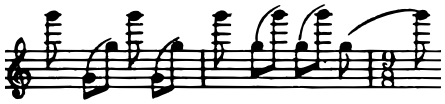

Figure 2.2: Béla Bartók, String Quartet No. 2, Moderato, 1st violin, mm. 16–17.

In music, context ultimately suggests what the listener should hear or not hear, but not everyone's response will be identical.

[19] Cf. Schönberg, 1967, p. 58: '*Liquidation* consists in gradually eliminating characteristic features, until only uncharacteristic ones remain, which no longer demand a continuation. Often only residues remain, which have little in common with the basic motive. In conjunction with a cadence or half cadence, this process can be used to provide adequate delimitation for a sentence.' For an example of liquidation in my portfolio, see the first movement of *Fragments of a lover's discourse* for string quartet ('Obviously it's love'), in which starting from measure 73 the idea presented in measures 46–50 gradually evolves into the neutral *glissandi* and *arpeggi* of measures 89–94.

In linguistics, phonemes are not independent elements, but are the smallest blocks that can form independent elements – lexemes – whereas non-phonematic *phones* simply go unnoticed or are filtered out. Similarly, music's sonemes are not independent elements, but are the smallest blocks that can form independent musical elements. These can have many names (motifs, rhythms, gestures, etc.) and do not possess a fixed *signified*, but at most a temporary and subjective one. The same applies to the other two terms that we are going to define in the following paragraph, those of 'poiemes' and 'aesthemes'.

Poiemes, aesthemes It is time now to return to the main difference between spoken languages and music. Spoken languages behave according to a bipartite model, in which a sender encodes a message (a signified) using sounds (signifiers) which will be decoded by a receiver back into the original message, the original signified (hopefully). When this process fails we call it a misunderstanding.[20]

Music, on the other hand, can be better described using a tripartite model. Although music does possess a signifier just as spoken languages do (the entirety of the sound in its raw acoustic description), it does not carry a fixed message, but only patterns and sound figures which will need to be decoded and abstracted from this raw signifier. What these sound figures will 'mean' or evoke, however, or even which patterns in a music piece will be worth paying attention to, will vary between the sender (the composer, the performers) and the different receivers (the audience).

In this tripartite model, that which in languages was referred to as the 'signifier', in music is usually referred to as the 'trace' (Nattiez) or the 'neutral level' (Molino), whereas what resembles a 'signified for the sender' (the composer)[21] is referred to as

[20] In reality, non-bipartite models can also be applied to languages, although unlike in music the possibility of guaranteeing determinacy and unambiguity remains a goal of languages, at least formally. Nattiez gives an example of this after presenting the theories developed by American philosopher Charles Sanders Peirce (Nattiez, 1990 [1987], p. 5): 'We might try grounding this discussion in the concrete through a small empirical experiment, returning to the example of the word "happiness". For each reader, the word will instantly "make sense". But what happens if we try to explain its content? In attempting to do this, a series of new signs occur to us – "bliss", "satisfaction", "contentment", "fulfillment", and so forth – *signs that vary from one reader to the next, according to the personal experiences of each.* For this reason it would be preferable, if possible, to substitute a spatial image in which interpretants appear to be caught in a web of multiple interactions, for the more conventional linear representation of an "infinite chain" of interpretants.'

[21] As mentioned earlier (p. 10), performers also add their own layers to the music. Accordingly, when the word 'composer' appears in a similar context throughout this commentary it is often short for 'composer and performers'.

	Model of interaction	Dimensions
Speech	bipartite	signifier, signified
Music	tripartite	trace, poietic dimension, aesthetic dimension

Table 2.1: Speech and music, bipartite and tripartite model

'the poietic dimension' and what resembles a 'signified for the receiver' (the listener) is referred to as 'the aesthetic dimension'.[22]

The process of promoting sonemes – or, to use a more immediate metaphor, the process of advertising which notes are more important and which notes are less important – is mostly up to the composer, not the listener. But although the former will use the art of composition to promote the material that should be perceived as salient, productive, the latter will ultimately have the last say, both on what will actually be productive and what 'meaning' it will have.[23]

A listener with a limited working memory, for example, might not be willing to follow a very slow-moving melodic line, even though it might be a productive element for the composer.[24] Moreover, some listeners will identify as productive sound patterns that are absent in the composer's poietic dimension or are simply the results of automatic processes, and, for instance, give prominence to secondary elements or elements that are particular to a specific epoch or style, instead of only focussing on the most deliberate sonic choices that carry the composer's signature.[25]

[22] Molino, 1990; Nattiez, 1990 [1987]. See also note 2 on page 1.

[23] Roland Barthes' essay *The Death of the Author* constitutes a famous example of a similar approach applied to literature. Cf. Barthes, 1977 [1967], pp. 147–148: 'Another – very precise – example will help to make this clear: recent research [Cf. Jean-Pierre Vernant (with Pierre Vidal-Naquet), *Mythe et tragédie en Grèce ancienne*, Paris 1972. esp. pp. 19–40, 99–131] has demonstrated the constitutively ambiguous nature of Greek tragedy, its texts being woven from words with double meanings that each character understands unilaterally (this perpetual misunderstanding is exactly the "tragic"); there is, however, someone who understands each word in its duplicity and who, in addition, hears the very deafness of the characters speaking in front of him – this someone being precisely the reader (or here, the listener). Thus is revealed the total existence of writing: a text is made of multiple writings, drawn from many cultures and entering into mutual relations of dialogue, parody, contestation, but there is one place where this multiplicity is focused and that place is the reader, not, as was hitherto said, the author. The reader is the space on which all the quotations that make up a writing are inscribed without any of them being lost; a text's unity lies not in its origin but in its destination.'

[24] On the concept of productivity see pp. 15 et seqq.

[25] More on this topic in 'Citations, stylistic contaminations and stylistic gradient' on page 46.

We can then further differentiate between the sonic elements promoted as salient by composers (independently of listeners) and those sonic elements perceived as such by listeners (independently of composers), and create here two more calques keeping Molino's pair in mind,[26] those of 'poieme' and 'aestheme'.[27]

POIEME

Any sonic element perceived as productive by the composer.

AESTHEME

Any sonic element perceived as productive by one or more listeners.

Every soneme is also a poieme, but not every poieme is a soneme. Accordingly, every soneme is also an aestheme, but not every aestheme is a soneme.

Productive musical processes What a composer is ultimately able to do in a music piece is to organise what will have a reasonable chance of being heard, followed and remembered, and what instead will be probably be filtered out. If we consider sonemes to be the smallest units that can successfully be built up to convey this information, we can abstract the dimension in which a sonematic discourse unfolds and call it a 'productive musical process'.[28]

PRODUCTIVE MUSICAL PROCESS

A process in the musical material that is productive for the composer and can successfully be perceived as productive by a particular listener.

For instance, when a listener hears a melodic line becoming salient, we can say that the melody's intervals, pace and overall contour become part of the piece's sonemes, while the overall evolution of the melodic dimension is able to emerge as one of the piece's productive processes.[29] If, instead, the same melodic line

[26] 'Poietic dimension' / 'aesthetic dimension'.

[27] In ancient Greek *ποίησις* (*poiesis*) was the word for 'creation', while *αἴσθησις* (*aisthesis*) was the word for 'perception'.

[28] The word 'process' will appear often in these pages. I had initially chosen the word 'layer', which captured the 'layered approach to composition' often mentioned in this commentary, but this turned out to be an unhappy choice, as the word 'layer' is usually interpreted as a literal 'layer of sounds'. There are cases, however, in which it is still appropriate to refer to a process using the word 'layer', and I have therefore preserved a certain oscillation between the two terms in a few selected cases.

[29] Hearing does not imply conscious awareness, and it can be argued that a process that affects the listener in the slightest subliminal way is productive. A dimension is non-productive only when the listener is both consciously and unconsciously deaf to it. We will see in the next section how dimensions that are non-productive for some listeners can be productive for others.

ends up buried inside an indistinguishable dense texture, its productivity will fade away in terms of melody and will probably emerge only in terms of harmony ('vertical' intervals), rhythm, timbre, or other dimensions, while its horizontal contours would no longer be perceived as sonematic. It can be argued that the timbres heard in Bach's *The Art of Fugue* (1750) should not be listed among the piece's productive layers, because although listeners can (and will) be affected by the instrumentation chosen by performers, the timbral dimension (as far as we know) was not particularly important to the composer, who wrote an open score for an unspecified instrumentation.[30] The same timbres however can be regarded as a productive layer if the work is described as being linked to a specific performance, and thus in defining the poietic dimension the performers' contribution is taken into account.[31]

Fertile musical processes We cannot know with any certainty what kind of fertile semantic targets[32] a piece will eventually promote in listeners – and this indeterminacy is probably part of what contributes to the beauty of music. However, we can say that the only elements that can promote information, whatever that may be, are by definition those that a listener perceives as relevant, productive. And if we did discover what this information was, we should also not assume that it would be the same for other listeners.

If we assume that the productivity of musical processes is not universal, and that by increasing the stratification of the compositional material different fertile semantic targets can be promoted and cohabit in function of listeners' experience and attitude, we can find the existence of multiple 'fertile musical processes', defined as:

> Fertile musical process
>
> *A process in the musical material that can reasonably be perceived as productive by at least some listeners.*

[30] We can say that timbre is formally undefined or weakly defined within the poietic dimension. Opinions about the instrumentation of *The Art of Fugue* are very diverse, ranging from those who believe it is music written for the inner ear to those who believe it was written for a particular instrumentation, often favouring keyboard or strings. For the sake of the example, we will assume here that it was written for an undefined instrumentation.

[31] See 'The performers' on page 10.

[32] See 'Fertile semantic targets' on page 12.

The adverb 'reasonably' demands clarification. We may not know the exact nature of a multitude of listeners, but we do know how the human brain and ears work and what their limits are. Thus the requirements of a fertile process are minimal: 1. It obeys a logic, a pattern that can *reasonably* be followed through; 2. It is able to emerge acoustically.

Fertile processes are audible (not hidden), but for some listeners, they will remain unheard for no particular reason. They are not in contradiction with the surrounding musical material, nor do they require any amplifying force from other processes to be discovered, but only the listener's will and capacity to discover them.

A composer is also a listener, and therefore this set of processes partially overlaps with processes that belong to the poietic dimension of music. However, a composer has a privileged knowledge of the material that comes from the creation of music (which is independent from the fruition of music), and this partially invalidates the reliability of the poietic dimension with respect to acoustic fertility. Thus, not all poietic processes will necessarily emerge as productive.

As a matter of fact, as we will see in the following paragraphs, *the way* in which a process is accessed can also determine its status, and asking the audience to access a dimension that is not directly accessible through sound would ultimately constitute *a request to the audience*: a request to embrace the composer's perspective.[33]

Forbidden musical processes If we accept the assumption that music exposes its logic inductively through the pairing of similar sound figures, then we must also take into account the possibility that sometimes the presence of a process can hamper the productivity of other processes, or even prevent their parsing.

In order to understand this concept we can use an example involving simple logic and leap years in the Gregorian calendar. The algorithm for predicting leap years contains three simple rules. The first rule states that if a year is divisible by 4, an additional day is added to the year ('add one day every four years'). The second rule states that if the year is also divisible by 100, the previously added day is removed ('remove one day every 100 years'). The third rule states that if a year

[33] 'Embracing the composer's perspective' also includes any request on the best way to access material that can be accessed through sound – see, for instance, Sciarrino's concept of 'listening ecology' quoted in note 14 on page 9.

is also divisible by 400, the removed additional day is restored ('add one day every 400 years'). These three rules show enough mutual 'permeability'[34] that we are able to infer their individual presence easily by browsing a multi-year calendar.

Now let us create a fictional calendar with only two rules. Rule one says that every year contains an additional day (29 February). Rule two says that every year removes the additional day added by rule one. Therefore every year will last 365 days, just as it did before we introduced our rules. Would we be able to infer the presence of these rules if we were informed of the existence of an immutable 365-day calendar? Or, we might even wonder, would these rules still be there?

Musical processes can cancel each other out in a similar way. For instance, the microtonal pitch variations of a violin that uses *molto vibrato*, for historical reasons, are not processed as microtonal elements, but as expressive features of a static pitch.[35] This can lead a composer to a choice between *vibrato* and microtonality, because choosing both might cause one process to suppress the other.[36] Or, for instance, in many concert accordions, the switch to convert the free bass system into the Stradella system tends to make a loud noise, much louder than the guitarist's 'slide noise' mentioned earlier; yet, during an accordion concert listeners are willing to filter this noise out. Nonetheless, if a composer were to write a piece in which one process consisted of almost imperceptible notes, and another process consisted of tiny beats on the accordion's body, asking a listener to filter that switch noise out would be asking the impossible, because that noise would immediately result

[34] ... Or 'mutual indifference' (cf. note 52 on page 33). We will discuss this concept applied to music more in depth in 'Impermeability of the musical material' on page 32.

[35] We can say that these micro-tonal pitch variations are not perceived as sonematic in terms of pitch, but in terms of character; and if we were focussing only on the abstract profile of a melody we would not consider them sonematic at all.

[36] That is, if an expressive vibrato is used often in a piece, listeners will likely continue to interpret also other microtonal deviations from the twelve-tone scale as expressive qualities of one of the standard twelve notes, because the vibrato effect will encourage this interpretation (thus *cancelling* the microtonal process out). In my experience, such interference tends to apply only to an uncontrolled *vibrato*, whereas, on the other hand, a *controlled vibrato* can lead to very interesting microtonal results. As this particular example also involves the choice of a preferred perspective to embrace (i.e. expressivity vs. microtonality), it also intersects with what will be discussed later in 'Condensation force and nucleation factors' on page 39.

sonematic within the second process.[37] For cases such as these, we can introduce the concept of 'forbidden processes'.[38]

> Forbidden musical process
>
> *A process in the musical material which, if present, would be impossible to parse due to a contradiction with the material itself.*

These processes cannot become acoustically productive, because they are in sonematic competition with other processes (but pay attention: sonematic $\neq$ sonic).[39] They can still be present in the poietic dimension however, or in theory, they can become productive by ignoring the acoustic dimension itself. For instance, the rhythm of a Shakespearian sonnet could be overwritten by a musical setting, yet its presence remains in the text, and could be accessed if we read the poem directly from the programme notes instead of hearing it. Similarly, our two rules for our fictional 365-day calendar can be still accessed by reading the beginning of this section (even though by browsing the calendar we would see no traces of them). Or, for example, in the accordion example above, if a 'listener' (reader) were to access our 'dirty' example by reading the score, they could simply imagine a fictional accordion in which the bass switch was silent and there would be no conflict between hitting the accordion's body and switching between bass systems. Or, for instance, in rhythmically complex compositions, the approximate nature of a human performance might make part of the fine-grained rhythmical details accessible only as a mental representation after reading the score, trusting the composer, or being the composer. All these cases can be more or less problematic when the main goal is to speak through sound.[40]

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[37] To put it differently: the percussive use of the accordion's body would mark an unwelcome set of timbres as salient to the musical discourse, making it difficult for the listener to filter these timbres out – whereas not emphasising the percussive dimension, on the other hand, can facilitate filtering the noisy switch out.

[38] Ligeti's warnings concerning integral serialism quoted in note 10 on page 6 can be seen as attempts to prevent the mutual prohibition of processes – namely degrees of freedom and gradients – in a language that aimed to control all musical parameters. A similar logic can be found in Schönberg's warnings about tonality (Schönberg, 1983 [1922], p. 29): 'Let the pupil learn the laws and effects of tonality just as if they still prevailed, but let him know of the tendencies that are leading toward their annulment. Let him know that the conditions leading to the dissolution of the system are inherent in the conditions upon which it is established.'

[39] That is, they are in *logical* competition, not necessarily in *acoustic* competition – albeit in a world that manifests its logic through sound.

[40] We could talk in these cases of 'resurrected musical processes', or 'necrophilic forces', or simply fetishes. See also 'Stylemes and tribal appeal of the musical material' on page 41. Of historical

Passivised and resonant musical processes We mentioned earlier the example of a melodic line that is absorbed by a dense texture to the point that it loses its productivity in terms of melody.[41] But is that melodic process really gone for good? Does it become a forbidden process, in the way that micro-tonality does in a piece with a lot of expressive *vibrato*?

By the definition above, a process needs to be in contradiction with the logical parsing of other processes to become forbidden, and acoustically discovering a melodic line with an interesting contour hidden inside a dense texture is not in contradiction with anything. It is still not really audible without considerable effort; what is it then? We can introduce here the concept of 'passivised musical process', defined as:

> Passivised musical process
>
> *A process in the musical material whose productivity is so weakened by the surrounding material that it cannot emerge without external help.*

If we wished to continue to play the game of leap years in the Gregorian calendar,[42] we could say that the very third rule of adding a day every 400 years is a passivised process. To be more precise it became passivised due to the presence of the other two rules. In fact, if the only leap year in our calendar happened every 400 years, we would probably celebrate the 29th of February as a very special day; some would even be thankful to be born in one of these few lucky generations who were able to witness it. But instead there are the other two rules, which leave this third rule intact but also lessen its visibility. And so few were aware back then that the year 2000 was one of such rare leap years that are also multiple of 400.

A passivised process is simply a process that demands an enhanced level of attention from a listener in order to emerge as productive. Discovering it would not hinder the correct parsing of other processes – as forbidden processes do[43] – yet it will usually remain unheard.

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interest is Stockhausen's comment concerning notational complexity in 'How time passes' (Stockhausen, 1959 [1957], p. 31): 'At first, the relationship between the degree of notational complexity and the exactness of performance appeared unimportant, but after observing it, we have drawn conclusions that are decisive for the further development of instrumental music, and that open up a new path, separate from that of electronic music.'

[41] See 'Productive musical processes' on page 21.

[42] See p. 23.

[43] That is, it would not lead listeners to cancel other processes out (see 'Forbidden musical processes' on page 23).

But what better is there to enhance listeners' attention than to write interesting music? And so our analogy with the Gregorian calendar ends here, because it can happen in music that certain processes, on the one hand can attenuate the exposition of other processes, on the other hand can also capture listeners' focus and persuade them to make the necessary effort to search for hidden levels – either by paying closer attention, or by listening a second time, or even by acquiring a copy of the score. Thus, a passivised process can resonate with other processes and become productive too, although, by definition, it cannot do so alone. When this happens it becomes a 'resonant process'.

Resonant musical process

A weak process in the musical material that becomes noticeable thanks to the help of other processes.

Not all resonant processes come from passivised processes. Some are *born* passive (indistinct) and can become 'productive' (i.e. they can be assigned to a particular 'open class')[44] only in the presence of other processes, because alone they do not have the necessary distinctiveness. The best example that comes to my mind (Figure 2.3) is the *staccato* figure in the piano accompaniment of Schubert's song 'Ständchen' (from *Schwanengesang*, 1828),[45] which is essentially just a uniform flow of bichords that go up and down and do not possess many distinguishing features besides their *staccato* character – which is often even omitted in performances. This accompaniment presents itself as a decorative carpet, in which nothing tells us whether it should be parsed as a single group of five notes, or as a group of $3 + 2$, or as a group of $1 + 4$, or even whether we should pay attention to that up-and-down motion at all. Nonetheless, a similar 'up–down–up–down' figure that often recurs in the vocal part (first presented as A–B♭–A–D–A in the fifth measure) will, at some point, for at least a part of the audience, project its fine-grained imprints into the listener's mental representation of that accompaniment too, fixing that '*staccato* figure' as a group of exactly five notes and as the voice's distant reverberation ('induction'). It is an affinity so fragile that a simple transcription of the song, or even a particular performance, is able to obfuscate it.

[44] Regarding the concept of productivity see pp. 15 et seqq. of this commentary.

[45] This particular example also involves other concepts that will be discussed in 'Condensation force and nucleation factors', pp. 39 et seqq.

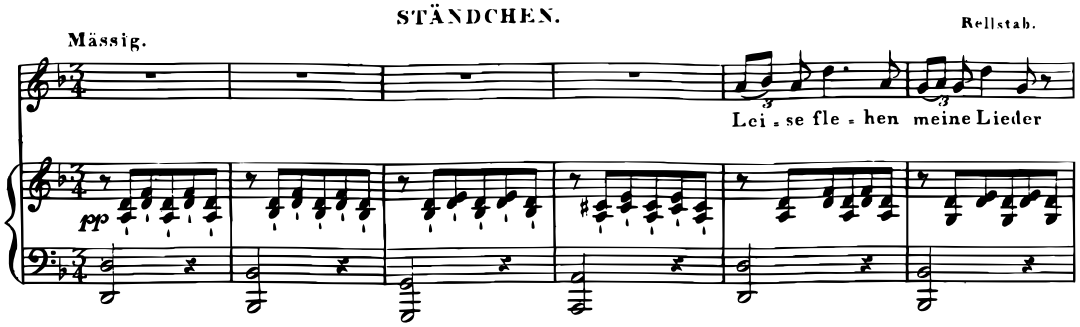

Figure 2.3: F. Schubert, *Schwanengesang* (1828), 'Ständchen'. Although the piano pulsation is relatively simple and coarse-grained, a similar melodic contour that often recurs in the vocal part (the up–down–up–down figure that appears in the fifth measure, A–B♭–A–D–A), once heard, can also project its fine-grained imprints into our perception of the accompaniment, transforming the *staccato* pulsation into the voice's distant reverberation ('induction').

We can use Schönberg's Variations for Orchestra, Op. 31 (1928) as a simple example to clarify some of the terms presented so far. There we can see that:

- In the first measures of the first variation, the counterpoint in the bass line (cb., fag., cf.) is clearly audible, and as such it can be noticed immediately; yet, during a particular concert the listener's attention might not focus on counterpoint, but on timbre; in either case – whether it is noticed immediately or not – that counterpoint constitutes an audible, fertile process.

- The piece is also written using twelve-tone technique; the existence of multiple voices makes the numerous manifestations of the series impossible to follow simply by listening; the dodecaphonic dimension however can become clear through the analysis of the score, or attentive repeated listenings; thus, the exact unfolding of the series constitutes a passivised process.

- If the piece had been written for a solo instrument, the serial nature of melodic lines could immediately emerge as a fertile process – although it would require educated ears.

- Not all the consequences of the twelve-tone technique used in the piece are buried (passivised); for instance, the timbre of the contrabasses that, due to the language's allergy to octaves, double bassoons and contrabassoon in

unison (instead of doubling the cellos one octave below), is clearly audible, and some may even perceive it as a hallmark of that language (fertile process).[46]

- Abandoning a series in the middle and allowing other instruments to complete it is in danger of obfuscating the series itself and making pitch selection resemble randomness; although this is often done (with some caveats), doing so *too often*, while spreading the series across many instruments, risks being in contradiction with twelve-tone technique itself (forbidden process).[47]

Depth of the musical material A famous maxim by Italo Calvino says 'A classic is a book that has never finished saying what it has to say'.[48] The novelist

[46] The prohibition on producing octaves is an extended rule (i.e. one that spans an entire piece or possibly an entire repertoire), which transcends considerations about the specificity of the musical material. As such, later in this chapter I will describe similar cases as confined to the stylistic realm of music. More on this topic in 'Stylemes and tribal appeal of the musical material' on page 41 and in 'Citations, stylistic contaminations and stylistic gradient' on page 46.

[47] It should always be possible to take the score of a twelve-technique piece, analyse it, infer all the transpositions of the series and mark them with colours. But if the composer increases the information noise by swapping portions of the series to an extreme degree, it will become *mathematically* impossible to decide which transpositions are used, or even to identify the series. On this note, it seems that for Schönberg preserving the recognisability of the series and exploiting the different impacts that different orders would have on the musical material was a priority; cf. Schönberg, 1950, p. 117: 'In the following pages, a number of examples from my own works will be analyzed to reveal some of these possibilities. It will be observed that the succession of the tones according to their order in the set has always been strictly observed. One could perhaps tolerate a slight digression from this order (according to the same principle which allowed a remote variant in former styles) in the later part of a work, when the set had already become familiar to the ear. However, one would not thus digress at the beginning of a piece.' Concerning these 'digressions from the order', in order to justify the exceptional cases found in the Gavotte and Intermezzo of his Suite Op. 25 (1923) – in which the end of the series appears too early – he provided as arguments the ear's habituation at that particular listening stage and – more tautologically – the exceptional usage of the series chosen, treated as a de facto agglomeration of three smaller series of four notes (these smaller fragments however are treated canonically). See *ibid.*, pp. 128–129: 'But in the Gavotte and the Intermezzo this problem is solved by the first procedure mentioned above: the separate selection of the tones for their respective formal function, melody or accompaniment. In both cases a group of the tones appears too soon – 9–12 in the left hand comes before 5–8. This deviation from the order is an irregularity which can be justified in two ways. The first of these has been mentioned previously: as the Gavotte is the second movement, the set has already become familiar. The second justification is provided by the subdivision of the BS into three groups of four tones. No change occurs within any one of these groups; otherwise, they are treated like independent small sets. This treatment is supported by the presence of a diminished fifth, $D\flat - g$, or $g - D\flat$, as third and fourth tones in all forms of the set, and of another diminished fifth as seventh and eighth tones. This similarity, functioning as a relationship, makes the groups interchangeable.'

[48] The article first appeared in Italian in the news magazine *L'Espresso* (28th July 1981) with the title 'Italiani, vi esorto ai classici' (which in English reads as 'Italians, I urge you to [read] the classics'). It was translated into English in 1986 by Patrick Creagh for the *New York Review of*

was referring to literature, not music, but his lesson can easily be applied to any art form. The idea of endless novel territories in a piece of music that are still to be discovered through more and more listenings reminds of our many definitions of layered processes, and if we keep following Calvino's maxim, the word 'never' would invite to an infinite amount of them – almost folded in a fractal-like shape – while the word 'classic' would suggest that such an infinite amount would be a welcomed goal to aim for.

We can then introduce the concept of 'depth of the musical material', defined as:

> DEPTH OF THE MUSICAL MATERIAL
>
> *The total amount of processes that can potentially be perceived as productive by listeners.*

This parameter can hardly be enumerated. If we also take into account all the choices that are due to the composer's unconscious mind, the depth of the musical material may be smaller than the poietic dimension, or may be larger.

Personally, at least as far as the most famous masterpieces are concerned, I am inclined to consider it approximately equal in size to the poietic dimension. If in fact most scores do contain choices made by pure chance (in principle, passages may be created by the composer transcribing the sound of their cat running on a piano), on the other hand every written sound can usually count on the composer's final approval, therefore it is safe to assume that in most cases the depth of the musical material will not be significantly larger than what the composer, for whatever rational or unconscious reason, approved. Conversely, it might be argued that if the author of a piece was an amateur musician (this however usually excludes masterpieces), several poietic processes will fail to result productive. As a result, the depth of the musical material will be significantly smaller than the poietic dimension – or to put it differently, the result will be poorer than the plan. Yet someone might counter-argue that experience is a prerequisite for imagination, and so mastering music will be a prerequisite for a rich musical imagination and, accordingly, a rich poietic dimension...

Books (Calvino, 1986 [1981]). The original Italian sentence reads 'Un classico è un libro che non ha mai finito di dire quel che ha da dire'.

As each of these (and similar) arguments does carry some truth, the two parameters (depth of the musical material and poietic dimension) cannot coincide exactly. Nevertheless, I believe that it is safe to assume that they are comparable in magnitude.

Trying to enumerate this parameter is a little like trying to answer one of Enrico Fermi's questions about piano tuners in Chicago.[49] Likewise, trying to guess answers may prove to be a similarly useful exercise.

Yield of productivity The processes that a listener is able to perceive as productive (regardless of how well hidden they may be) will ultimately be finite in number and will also non-linearly interact with each other. To describe this non-linear interaction, we can introduce the concept of 'yield of productivity'.

> YIELD OF PRODUCTIVITY
>
> *The total interaction between all the processes that are perceived as productive by a particular listener.*

The concept of yield of productivity encompasses every aspect in which a music piece affects a single listener. Untangling this dimension might be done better by neuroscientists and music psychologists than composers. The *awareness of its existence and variability*, however (no matter the name chosen for it) is something composers tend to become more or less acquainted with.

Field of productivity of the musical material If the yield of productivity focuses on what is audible to a single listener, other listeners may 'observe' from different perspectives. In order to outline all the possible ways in which a musical

[49] For many years 'Fermi questions' or 'Fermi problems' have circulated among physicists as entertaining diversions and emblematic examples of the correct posture to keep when a fast, rough estimate of quantity which is either difficult or impossible to measure must be obtained. Philip Morrison, in an interview for the documentary *The World Of Enrico Fermi* (1970), recalled the one mentioned here using the following words: 'He [Fermi] would look at you and say ... "How many piano tuners do you think there are in Chicago?" You feel you have to look that up. But of course you don't have to look that up. You just have to ask yourself ... "How many houses are there? What are the chances that they have a piano? How often do these have to be tuned? How many pianos can a man tune in a day?" And pretty soon you have a rough answer. Oh, you won't know exactly; but you know it's not thousands, or not ones, but somewhere in between. And of course, the better you know the subject, the more you'll be able to answer it.'

material can *potentially* reach different points of view, we can introduce the concept of 'field of productivity of the musical material', defined as:

> FIELD OF PRODUCTIVITY OF THE MUSICAL MATERIAL
>
> *The sum of all possible interactions between those processes that can potentially be perceived as productive by listeners.*

Depth and field of productivity are close yet distinct concepts. Their difference resembles the difference between quantity and quality: if on the one hand depth simply counts the amount of productive and fertile processes, field of productivity on the other hand tries to capture how these might interact in a hierarchical model. As with 'depth', describing all these potential interactions is ultimately another difficult 'Fermi problem' to solve.[50] However, if we find the courage to face the challenge and search for an answer to our previous 'Fermi problem', this question will appear less unsolvable.

Impermeability of the musical material If a musical process can become forbidden due to the presence of other processes, some ways of organising the musical material can create more obstacles and forbid more processes than others. Thus, a musical process can be intrinsically more or less impermeable, and the musical material can present a higher or lower degree of impermeability overall. For instance, exploiting the full dynamic range of an orchestra can make the material impermeable to extended techniques that are relatively silent, while aiming at naturalness and realism (compared to speech) in a sung melodic line is impermeable to pointillism, and so on. A process that is impermeable is the exact complement of one ore more forbidden processes.

The concept of permeability of the musical material was first introduced by Ligeti,[51] and it is a concept we must take into account when inclusivity and richness

[50] See note 49 on the preceding page.

[51] Cf. Ligeti, 1965 [1960], p. 8: 'Our decreasing sensitivity to intervals gives rise to a condition which, for want of a better word, we may call "permeability". This means that structures of different textures can run concurrently, penetrate each other and even merge into one another completely, whereby the horizontal and vertical density-relationships are altered, it is true, but it is a matter of indifference which intervals coincide in the thick of the fray.' Discussion on the topic continues in the following pages, where, among others, the wording 'mutual indifference' is used as a synonym for permeability (cf. note 52 on the next page). Examples of this concept can already be found in tonal harmony; for instance, in severe style, unless timbres differ (e.g., male voices opposed to female voices), the virtual parallel fifths and octaves that might emerge

become a goal, because it reminds us that inclusion always implies some degree of exclusion. Even omnipotence compels a god to relinquish the ability to fill three pages with a list of impossible achievements (something humans can do quite well – at least most humans), and so there will always be forbidden processes whatever musical world we choose. Some choices, however, will be more restraining than others.[52]

Energy of the musical material Introducing concepts such as permeability, arrow of time (we will present this concept in the next chapter)[53] and entropy implies as a logical requirement the concept of energy. Defined in physics as 'the ability to do work', energy is a concept not so easy to translate into music. It is also a vast topic, with consequences that reach the core of the musical discourse – such as thematic exposition, development, directionality – and unfortunately this paragraph can hardly go beyond a short introduction.

I remember that the notion appeared on my radar for the first time while I was studying tonal harmony during the early years of my composition training (I was still in high school). It was introduced to me in the form of an analogy to explain the differences between modulations to some closely related tonalities.

At the time I was told (Figure 2.4): 'Modulating to the tonality of the dominant requires energy, but, once there, descending to the base tonality will feel easy

from voice crossing become forbidden, despite the fact that strictly speaking no parallel fifths are present. We might see this as a layer of impermeability added by the similarity of timbres, which restricts the total degrees of freedom. When Ligeti's article was written (the German version dates from 1958) integral serialism was still dominating the musical scene, and thus serialism's principles take an important part of the author's focus.

[52] For the emergence of this concept within my portfolio, see pp. 63, 68, 76–77 and 90. See also Ligeti, 1965 [1960], pp. 14–15: 'In Stockhausen's "Gruppen", for example, the backbone of the form is given by contrasted types – hacked, pulverized, melted, highly condensed – and their gradual transformations and mixtures one with another. In this method of composition it is vitally important to pay attention to the available degrees of permeability. The two extreme types enjoy exceptionally good mutual permeability: a dense, gelatinous, soft and sensitive material can be penetrated *ad libitum* by sharp, hacked splinters. Their mutual indifference is so great that the layers can get considerably "out" in time, and enjoy fields of inexactitude of considerable latitude. It is this peculiarity that enables the three orchestras to play together despite the fact that they are widely separated in space: the points of entry for each orchestra are generally fixed, but in the further course of a group the orchestras can diverge to a greater or lesser degree, without any damaging effect on the general result. "Soft" materials are less permeable when combined with each other, and there are places in Stockhausen's "Gruppen" of an opaque complexity beyond compare.'

[53] See ''Alive' and timeless processes' on page 59.

and natural, almost like going up to the top of a mountain and then going down. Conversely, modulating to the tonality of the subdominant feels easy, but once there, going back to the base tonality will require energy.'

After initially thinking, as a young student, 'Alright, that's perfectly clear', two questions came into my mind: 'OK, but what is energy? And if a given musical passage does not *internally* possess enough energy how can we provide it *from 'outside'*?'[54]

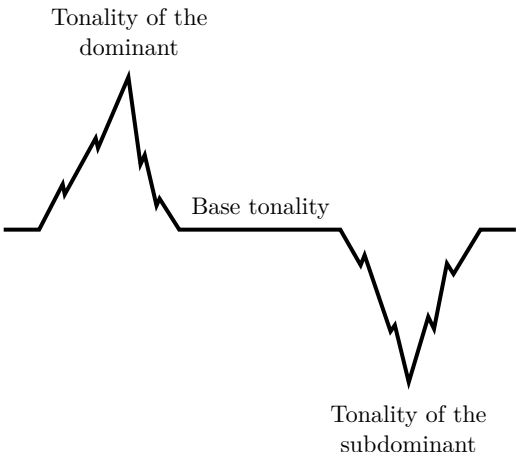

Figure 2.4: Tonalities and energy

As for the first question, I already had a clear understanding of the concept of dissonance and its attraction towards consonance, therefore I only needed to extend the same 'ability to do work' to the case in point: 'Being in the tonality of the dominant is a bit like being in a dissonance', I simply thought. But as for what it meant to provide energy from 'outside' and find a way up the cliff, that was an entirely different story and a new challenge to tackle. Before we search for an answer to this second question, we will need to leave tonal harmony and the specificity of the example above and define the concept of musical energy in a more general form.

Dissonance and consonance in tonal music are sometimes redefined in terms of tension and release, at other times in terms of movement and staticity, but what they ultimately are is 'expectations in the audience' – or better, a presence of expectation in the first case, an absence of expectation in the second case.[55]

[54] 'From outside' means from anywhere else but what we have just heard, its internal logic, or its current patterns.

[55] Generally speaking, the two concepts of consonance and dissonance are covered by a vast body of literature that does not always converge towards the same conclusions. Within tonal harmony, however, dissonance and consonance are safely defined as *postulates* (e.g., a minor second is a dissonance because the rules of harmony say it is) – although the origin of these postulates has a long history and has involved numerous debates. Such postulates, over the three centuries of tonal harmony, have evolved very little, at least in their formal status, much less so in their treatment. In that same system, the unstable character of dissonances and the stability of consonances can both be attributed to another postulate: dissonances must resolve to consonances. The fact that the diminished fourth is catalogued as a dissonance whereas

If we define musical energy as the ability of the musical material to induce expectations, the first thing we notice is that the conditions for this in music are countless, with harmony representing only one particular instance. It can be enough to present a pattern for the brain to keep expecting it again, or show a clear direction for it to be willing to follow through, and so on. Once the listener is engaged, however, the material can slowly exhaust its momentum and its energy can dissipate. Music can accompany this dissipation and indulge it, as in the case of the tonal dissonance–consonance movement, or instead contradict it and charge the material further with new energy (new expectations).

An expectation does not necessarily need to have a clear destination (as happens in the simple case of dissonance–consonance movement in tonality), and in its most primitive form the bare question 'What is it that I have just heard?' already implies an expectation of discovering an answer.

ENERGY OF THE MUSICAL MATERIAL

The ability of the musical material to induce expectations in listeners.[56]

Different types of energy can dissipate at different speeds, depending on the degrees of freedom of the musical material and other factors. For instance, the degrees of freedom of a fast ascending gesture are compressed in a relatively small amount of time before the material reaches the end of the spectrum of audible frequencies; or

its enharmonic equivalent, the major third, is catalogued as a consonance should tell us that the concepts of stability and instability are ultimately the defining factors of consonance and dissonance and not the other way around (to the extent, in the case of ambivalent enharmonic pairs, that instability can even be reconstructed *a posteriori* after a resolution has already taken place). See Rosen, 1975, p. 299: 'It is precisely this effect of ending, this candential function, that defines a consonance. A dissonance is any musical sound that must be resolved, i.e., followed by a consonance: a consonance is a musical sound that needs no resolution, that can act as the final note, that rounds off a cadence. Which sounds are to be consonances is determined at a given historical moment by the prevailing musical style, and consonances have varied radically according to the musical system developed in each culture.' Similarly Kamien, 2010, p. 39: 'A tone combination that is stable is called a consonance ... A tone combination that is unstable is called a dissonance.' See also Meyer, 1901: 'Neither the physicist nor the physiologist can prove by physical or physiological laws, why we must enjoy certain combinations of tones.' See also the concept of 'habituation' in Peterson, 1925. As for the broader meaning of consonance and dissonance, see Tenney, 1988; Hutchinson and Knopoff, 1978, 1979; Danner, 1985; Huron, 1994; Kameoka and Kuriyagawa, 1969.

[56] A similar concept seems already to have emerged in the late eighteenth century in Johann Georg Sulzer's idea of 'aesthetic force' (*ästhetische Kraft*), for which he himself offered the alternative name of 'energy' (cf. Riley, 2002, note 46 on p. 11). More on this in note 61 on page 38 of this commentary.

introducing a single minor new element in a relatively regular pattern will prompt questions that will likely linger in listeners' minds for a limited amount of time before going unanswered. Furthermore, the answers to the questions that novel elements raise can be given soon after they are presented, simply by the composer's choice.[57]

On the other hand, there are cases in literature where the material appears to be charged with an exceptionally durable energy and only minimal interventions from the composer are required to 'keep going'. A long time ago, while I was a student of Prof. Detlev Müller-Siemens in Vienna, I happened to discuss with him the piano part of the second movement (Andante) of Mozart's Piano Concerto No. 21 K. 467 (1785). There I remember a sentence of his that struck me: 'I feel that here Mozart is always in front of an infinite amount of possible melodic choices, and each of them is the right one; we listen only to the little group of possibilities that Mozart decided to write down'. The reason why I was impressed is that somehow I was having a similar feeling. Only much later, however, did I begin to realise that it is the high amount of 'energy' whereby the orchestra is kept constantly charged that lets the piano always feel as if it is 'going down the cliff'.

In Mozart's movement everything is constructed as a prolonged sense of expectation. A calm and slow-moving bass line is coupled with a recurring musical period that lasts over a minute, and this carves the direction of the piece in stone. In this rock-hard slow walking of the orchestra, the piano is truly free to wander as it pleases, almost as if it is being carried along by the current ('minimum entropy').[58] The first movement (Grave) of Pergolesi's *Stabat Mater* (1736), the second movement (Allegretto) of Beethoven's Symphony No. 7 Op. 92 (1812), and

[57] See the concept of 'volatility' briefly introduced in note 63 on page 39.

[58] 'Minimum entropy' means that any minimal variation from a traced pattern will have a high chance of being perceived as 'surprising'; or, borrowing a term from theory of information, will have a 'high *informational value*'. The opposite of low entropy, i.e. high entropy, can be expected in music to be accompanied by a high level of redundancy and the assumption that one or more elements are not essential to decoding a message (e.g., playing the correct notes, the correct rhythms, etc.), because no single element alone is sufficiently surprising or significant. Here the 'content of the message' is only the likelihood that an event will occur ('self-information'). For an early application of the concept to music, see Ligeti, 1965 [1960], pp. 10 (quoted in note 10 on page 6 of this commentary), 11 (note 21), and 19. See also ''Alive' and timeless processes' on page 59 of this commentary. For the concept of redundancy in theory of information, see Shannon, 1948, p. 414.

Ravel's *Bolero* (1928) are other famous examples of similar 'very slowly discharging' musical materials that allow the injection of new energy with little effort.[59]

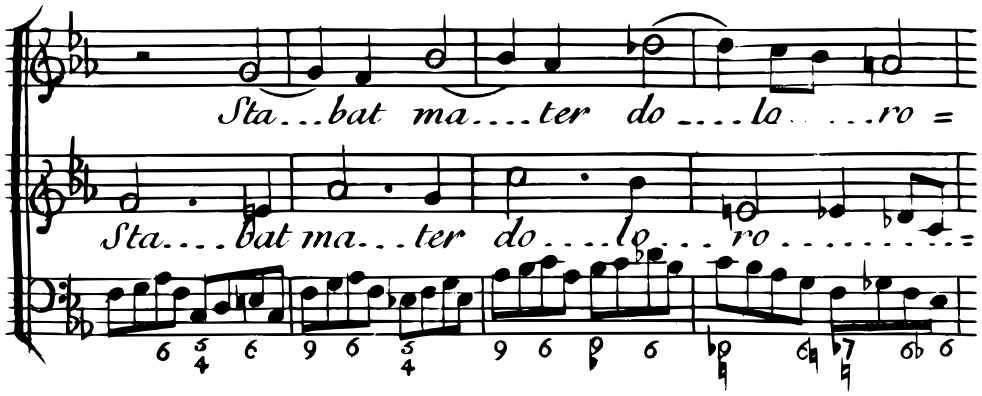

Figure 2.5: G. B. Pergolesi, *Stabat Mater*, Grave, mm. 12–15.

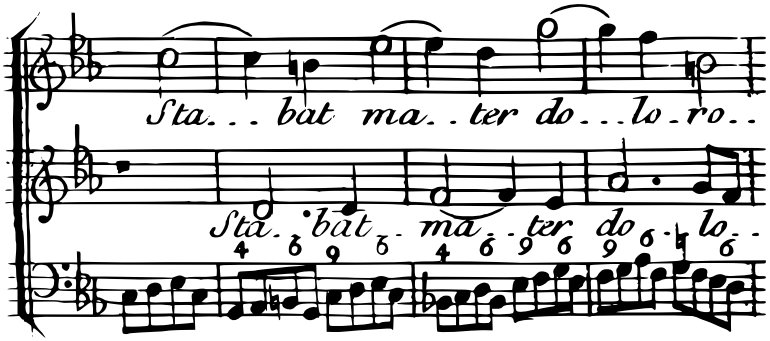

Figure 2.6: G. B. Pergolesi, *Stabat Mater*, Grave, mm. 28–31. When reproposed here in the tonality of the dominant, the simple inversion of an ascending major second into a descending minor seventh (the dissonant interval between the two 'stabat') – perhaps only dictated by the limited vocal ranges available – is sufficient to carry high *informational value* and present itself as a surprising novelty – see note 58 on the previous page.

Now that we have defined the concept of energy as the ability of the musical material to induce expectation in listeners, we have the tools to answer the second

[59] 'Little effort' here means that the musical material allows the composer to introduce a high number of possible 'surprising', or 'energetic', directions while introducing only minimal changes (see Figure 2.6). Or to put it differently, due to the nature of the musical material, the effort necessary to introduce pattern-breaking novel elements is low. A somewhat opposite concept, that of 'volatility', is briefly discussed in note 63 on page 39.

question, i.e. what it means to introduce energy *from 'outside'*.[60] If 'energy' can be measured by looking at the 'work' that the musical material's elements are expected to do, then we can say that 'injecting energy from outside' means 'doing work that is not suggested by any musical element heard so far' – or, in short, *doing unexpected work*.[61] The simplest case is the rupturing of a pattern or the introduction of novel elements, and the most trivial example happens in almost every single piece of music ever written: the incipit. Every time a piece begins it breaks a previous pattern – silence – and so every piece always begins already 'charged' (and this is the reason why the four pieces mentioned above are 'charged' in the first place).[62]

[60] When a musical material requires energy from outside we can use the expression 'negative energy', which tries to capture the material's thirst for external input, instructions, new directions from the composer; the music's future can no more be a closed consequence of the music's past with the composer simply witnessing the process, because what we have just heard was not energetic enough or had already exhausted its energy. This concept is intertwined with the idea of 'arrow of time', which I discuss in ''Alive' and timeless processes' on page 59. For the emergence of the concept of 'negative energy' within my portfolio, see p. 92.

[61] Note that here the adjective 'unexpected' is not overloaded with any additional meaning other than its literal one – i.e. it does not mean 'unexpectedly beautiful', or 'unexpectedly enjoyable', or 'unexpectedly well-thought', and so on, but simply 'unpredictable given the information we possess about the musical material'. A consequence of introducing unexpected patterns is that, by definition, it is impossible for the musical discourse to be completely self-contained ('internal') – i.e. where every element is a consequence of the processes previously heard. It is of particular interest that the concept of musical energy – although still deeply rooted in the idea of a 'main theme', from which nothing will really diverge too much – was developed in very similar terms in the writings of Johann Georg Sulzer, and later elaborated further by Johann Nikolaus Forkel and others; cf. Riley, 2002, p. 13: 'Sulzer's vocabulary of attention and sentiment was routinely deployed to explain the aesthetic goal of various pieces, passages or technical features. Among the accidental forces, Sulzer himself lists some musical instances, which include sudden dynamic changes, long pauses, changes of tonality and the reharmonization of a familiar phrase [Sulzer, "Von der Kraft", 126]. Forkel has a similar principle in mind when he speaks of "figures of attention" ("Figuren für die Aufmerksamkeit"), which may consist of "new, unexpected turns and sudden transitions in the progression" [Forkel, *Allgemeine Geschichte*, i, 58–9 . . .]. As regards to the essential forces, the *Allgemeine Theorie* article "Main Theme" ("Haputsatz"), which Sulzer co-authored with Kirnberg, explains how a single theme, presented in successively varied ways and judiciously complemented with contrasting themes, can arouse and sustain attention on a sentiment [Johann Georg Sulzer, "Hauptsatz", *Allgemeine Theorie*, 126, i, 522–3].' An overloaded definition of 'unexpected work' does however emerge from Sulzer's definition of 'accidental forces', where, together with the 'new', the 'unexpected' and the 'extraordinary', the 'great' and the 'wonderful' are also mentioned (Sulzer, 1774, p. 602): 'Die gewöhnlichsten zufälligen Kräfte sind das *Neue*, das *Unerwartete*, das *Ausserordentliche*, das *Große* und das *Wunderbare*'.

[62] The reason why this initial charge is extraordinarily well preserved – or even increased – in these examples, however, is connected to other mechanisms (see the concept of 'volatility' briefly introduced in note 63 on the following page). One trivial way, among others, of preventing the musical material from discharging its initial 'charge' is by withholding or delaying the development of some of its most exposed elements, because this means delaying their exhaustion. Recently, a composer who listened to a piece of mine told me 'I knew that this element would

This correlation does not apply only to the incipit, but also to the rest of a piece. There too, introducing new elements and patterns that do not find justification in previous elements, or steering from a given direction, or simply introducing new views on the material, carry an energy that asks to be discharged, in which new and unrecognisable elements raise novel questions in listeners' ears and invite them to begin new quests to explain the unprecedented.[63]

Condensation force and nucleation factors Reducing complexity is a human tendency and a consequence of our constant search for patterns. In a world like the world of music, which leaves everyone free to decide what to pick up, focus on and enjoy, listeners can either choose to leave the interpretation of what they are listening to open and multifaceted, or direct it instead towards a privileged frame of reference they feel is the correct one, or they are particularly interested in, or they simply

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eventually come back, because you introduce it and then you don't develop it; I was waiting for it'. The composer was referring to the *staccato* notes played by the two violins and the viola at the beginning of the first movement of *Fragments of a lover's discourse* (the element does indeed eventually return, four minutes later). A notable exception to 'pieces that begin producing sound' that is worth mentioning – but that would require a separate discussion – is Cage's *4′ 33″* (1952).

[63] There are cases that apparently contradict this principle. For example, music with a high rate of novelty (e.g., randomised material) might seem not to possess very high energy. Usually however the contradiction is only apparent, because due to the high entropy, the new material is often weakly exposed and the novelty itself may not be easily identifiable as such ('low informational value' – see note 58 on page 36). We can further mention the consequences of the different velocities at which different musical materials tend to dissipate their 'charge'. In truth, the very fabric of the musical material can be constructed to be more or less energetically 'volatile'. Such 'volatility' (i.e. how fast a given material tends to dissipate its energy) introduces a further new dimension that is independent of the bare amount of 'instantaneous charge'. Perhaps this concept is simpler than it sounds: most expectations in music are promoted inductively (i.e. through patterns), and this also includes 'the expectation of how fast expectations are normally resolved'. If every pattern-breaking new element finds an answer soon after being introduced, it may become reasonable for listeners to learn that there is no need to hold any breath after a novelty. A material constructed in this way, with only short-term questions answered immediately, will constantly need to devour large bits of novelty only 'to keep going'. A similar scenario might simply arise from the technical features of the new elements introduced, and might be a desirable outcome (as mentioned in note 60 on the preceding page, I often call this thirst for energy 'negative energy'). Similarly, there is no need for listeners to hold any breath in front of musical materials with high entropy, because there they are taught that questions do not emerge at all (staticity, low informational value). As a composer, I believe that every point in the 'energy-volatility Cartesian plane' is worth exploring. Assuming that we want to keep the 'charge' constant, a musical material that dissipates its energy at high velocity will tend to sound like a continuous exposition, whereas a material that dissipates its energy more slowly will tend to sound more akin to a long development. As I mentioned earlier, this paragraph cannot go into detail about all the possible ramifications of the concept of energy. For the emergence of these concepts within my portfolio, see pp. 59, 78, 87–88 and 92.

find convenient.[64] The reorganisation of the musical material around a privileged frame of reference, once formed, is able to align the new bits of information received and act as a sort of self-reinforcing ordering force, a 'good confirmation bias', which has the primary goal of making the parsing of new information easier, or more enjoyable.[65] When it is present, we can refer to 'condensation force', defined as:

> Condensation force
>
> *A possible tendency in listeners, promoted by the musical material, to resolve indeterminacy, complexity and ambiguity by choosing to privilege a particular frame of reference.*

This force is active in both the aesthetic and poietic domains and consists in choosing to privilege a frame of reference with the goal of observing more in depth, using it as a sort of attack point promoted by the music to find order in the sound's complexity. Its purpose is not to filter out something that does not fit with an arbitrary interpretation, but to ease the current load by linking and soldering different layers together and making room for new information. A condensation force is not always present, nor is it necessary or necessarily desirable, and its existence depends on both the musical material (e.g., the existence of productive

[64] Cf. Gilovich, 1991, p. 9: 'We are predisposed to see order, pattern, and meaning in the world, and we find randomness, chaos, and meaninglessness unsatisfying. Human nature abhors a lack of predictability and the absence of meaning. As a consequence, we tend to "see" order where there is none, and we spot meaningful patterns where only the vagaries of chance are operating.'

[65] These privileged frames of reference are sometimes called 'perceptual interpretations' by psychologists (not limited to music). Cf. Kahneman, 1973, p. 69: 'Selection of an interpretation is required because stimulation is normally ambiguous. Any stimulus event probably activates several recognition units in each set or dimension, although to different degrees. In addition, there are different degrees of *Perceptual Readiness* to make each of the possible interpretations at any instant in time. The interpretation which is selected is that for which the sum of readiness and activation is highest. It is useful to assume a threshold below which no interpretation is made. Thus, a stimulus may fail to be fully interpreted if it was faint or did not activate any recognition for which there was sufficient readiness. Interpretations serve as input for subsequent stages of processing, including storage in permanent memory and the selection and control of responses. An uninterpreted event will have little or no effect on these stages.' For this particular concept applied to music, cf. McAdams, 1987, p. 43: '... some work has shown that with certain stimulus configurations, even simultaneous and sequential grouping processes can conflict with one another creating situations with multiple perceptual interpretations. The resulting perceived qualities of the sources depend on the way the conflict is resolved (Bregman & Pinker, 1978). It is clear that active and passive attentional processes can play a strong role in the resolution of these conflicts, particularly at higher levels of grouping where functional ambiguities resulting from conflicting "vertical" (harmonic) and "horizontal" (melodic) organizations can be of great musical value.'

processes that strongly dominate over the others, the presence of extra-musical information, such as a title, a sung text, etc.) and listeners' attitude.

For instance, the evocative title of Zimmermann's *Intercomunicazione* (1967) might suggest that a cello and a piano are trying to exchange messages between themselves, and if a listener were to embrace this perspective their listening focus might become that of paying particular attention to what trace each of the two instruments leaves on the other. Or, still because of a title, in listening to Lutosławski's *Preludes and fugue for 13 solo strings* (1972) a condensation force might attempt to push the listener's attention towards finding similarities and differences between the piece and the Western tradition of preludes and fugues. Finally, in our previous example of Schubert's song 'Ständchen' (Figure 2.3, p. 28), the possible attraction towards interpreting the piano's *staccato* pulsation as a reverberation of the sung melody is, too, a condensation force, this time triggered by the musical material alone, without extra-musical information and only favoured by the compatibility of the sound figures involved.

When present, the conditions that make this condensation possible can remind us of the nucleation event that allows the growth of crystals and leads to a phase change in matter. We can then talk of 'nucleation factors', defined as:

> Nucleation factors
>
> *The factors in the musical material, listeners' attitude, and possibly any attached extra-musical information, capable of triggering a condensation force.*

Condensation force and nucleation factors ultimately capture what listeners find easy to hold on to and follow, and where the material finds it easy to coagulate.

We cannot control listeners' attitudes, but we can definitely control the musical material. Thus, for example, we can say that a musical material with a strong extra-musical programme, or a strong hierarchy of layers and processes, or a strong identity, possesses strong nucleation factors.[66]

Stylemes and tribal appeal of the musical material A maxim attributed to Max Weinreich states 'A language is a dialect with an army and navy'. The sentence is very powerful, and it certainly contains some truth, especially if we

[66] For the emergence of this concept within my portfolio, see pp. 56, 66, 68, 72 and 95.

focus on regional variations.[67] However things are rarely so black and white, and the distinction between a dialect and a language might not always be completely arbitrary (extra-linguistic). For instance, often a difference is that a dialect cannot express the same register variations that a language is able to express, and therefore a dialect might be able to deliver a love poem but have a hard time translating Kant's *Critique of Pure Reason*. Thus, unlike languages, dialects may be register-confined and used only for specific purposes.[68]

In music, a similar specificity can be achieved through genre. Someone who wants to dance can search for dance music, someone who wants to create an atmosphere can search for furniture music, and so on.[69]

Sometimes the purpose of using a dialect is not really practical, but subcultural. In this case we do not refer to registers, but *styles*. The main goal of sociolinguistic styles is to construct sociological identities, affiliations and distinctiveness rather than achieving expressive immediacy in specific contexts.[70]

Musical genres can also have the goal of constructing long-term affiliations and sociological identities, instead of serving a particular practical purpose that is functional to the specific context (as registers can do). Consequently, we can find

[67] Here by 'dialect' we mean any deviation from a standardised language. This includes idioms, slang, regional variations, vernacular, etc.

[68] The lack of a technical register does not apply to every dialect. See, for instance, Bex and Watts, 1999, p. 122: 'This type of combination of technical register with a non-standard variety is much more common in some language communities than others. In German-speaking Switzerland, for example, most speakers use their local non-standard dialect in nearly all social situations and for nearly all purposes. Thus it is that one may hear, in the corridors of the University of Berne, two philosophy professors discussing the works of Kant using all the appropriate philosophical vocabulary while using the phonology and grammar of their local dialect.'

[69] For a deeper discussion on the use of registers in music, see the next paragraph, 'Citations, stylistic contaminations and stylistic gradient' on page 46.

[70] Cf. Irvine, 2001, p. 22: 'Whatever "styles" are, in language or elsewhere, they are part of a *system of distinction*, in which a style contrasts with other possible styles, and the social meaning signified by the style contrasts with other social meanings. ... The second lesson is that the relationships among styles are ideologically mediated. It is a commonplace in sociolinguistics that ways of speaking index the social formations (groups, categories, personae, activity types, institutional practices, etc.) of which they are characteristic. But an index can only inform social action if it functions as a sign; and a sign requires an interpretant, as Peirce long ago pointed out. That is to say, it must be meaningful to, and at some level understood by, some persons whose actions are informed by it. So these indexes must partake in participants' understandings of their social world and the semiotic resources available in it. Those understandings are positioned, depending in some measure on the participant's social position and point of view. They are also culturally variable; that is, they are neither universal nor entirely predictable from social position (such as socioeconomic class) alone, without consideration of local history and tradition.'

musical subcultures such as 'goths', 'metalheads', 'emos', 'punks', and so on, each with a specific musical pantheon of reference and followers that can easily become one-genre-only music listeners, who choose to listen only to one particular style of music as a way of proclaiming (and experiencing) their identities.[71]

Music fruition's tripartite model is based on the assumption that indeterminacy will be processed by different individuals with different experiences and attitudes, but it is not impossible to destroy the model by cherry-picking the actors involved. For instance, if a composer decided to become the only listener of their own music, that would be enough to bring the tripartite model back into speech's bipartite model, with only a signifier and something resembling a signified to deal with, and a mirror to talk to. Or, if a musical material – or, more broadly, a composer's work – insisted too often on the same selected normative choices without any internal (specific) reason, that alone would risk acting as a 'cherry-picking force' in selecting an audience, almost like 'market targeting' does in sales. The danger that this force brings is the potential sociological crystallisation of expressive tools (registers) into conforming prisons (styles).

For example, denying any possibility of tension and release in the musical material will result in staticity,[72] and if done pervasively and without expressive purposes, this staticity may result in sociologically selecting an audience that is willing to appreciate stylised art forms, while at the same time it may push away those who are in search of driving gradients and contrasts. Or extensive consideration of an extra-musical layer such as performers' body movements may result in an audience more interested in dance than music. Or, similarly, always focussing on the same

[71] The two functions, expressive immediacy and social affiliation, cannot be completely mutually exclusive, and resorting to particular linguistic registers in order to obtain immediacy always involves adopting a distinctive group of *signifiers* just as affiliation does. One important difference, however, is that registers can be modulated in function of a context, while affiliation constitutes a more or less permanent identity tied to a speaker or a listener, regardless of the context. Thus, unlike in the next paragraph, where the possibility of creating 'gradients of superimposed choices' will guide what will be considered closer to linguistic *registers* in music (p. 46), this paragraph focuses on the concept of *style* more or less identifiable as *a rigid attitude*.

[72] Cf. Ligeti's comments on Boulez's *Structure Ia*: 'This music is like hanging carpets of mighty oriental quietness, because the forces that drive on the flow of the form have been de-activated' (Ligeti, 1965 [1960], p. 16). See also Pousseur's comments on Webern's music (Pousseur, 1959 [1957], p. 47): 'Each of these factors, in itself, means the destruction of a particular "strong" form, that had simply imposed itself upon our consciousness as a relational system for this or that dimension, considerably reducing the wealth of sound material, and ultimately making the latter appear as the accidental result of a static, purely ideal basic order.' More on this topic in ''Alive' and timeless processes' on page 59.

selected musical dimensions (e.g., timbre, mental representation of timbres, acoustic saturation or lack thereof, etc.) at the expense of flattening other dimensions, might attract those tuned with the same taste and leave others indifferent. Potentially, any narration of what should be considered musically *prestigious*[73] and what instead is to be discarded, if based solely on criteria explicitly or implicitly agreed upon in advance with an audience, can constitute a normative force.

All these abstract norms belong to the stylistic sphere of the musical material, which can constitute a tribalising force similar to the force that styles have in sociolinguistics.[74] With this in mind, we can introduce the concepts of 'styleme' and 'tribal appeal of the musical material', defined as:

STYLEME

Any normative element in the musical material.

TRIBAL APPEAL OF THE MUSICAL MATERIAL

The stockpile of normative elements in the musical material that do not musically arise from the material itself, or from expressive needs.

The presence of a 'tribal appeal' does not originate from the musical material or the brain's pattern mining during music processing, but by novel, or acquired, or unquestioned habits. It constitutes a sort of pre-installed condensation force, or 'confirmation bias', capable of soldering the aesthetic and poietic dimensions together before even listening to what the musical material has to say.[75]

[73] 'Prestige' is another term that has a specific meaning in sociolinguistics – not so different, however, from its ordinary meaning.

[74] See also the concept of linguistic 'iconisation' introduced by Irvine (*ibid.*, p. 33): 'Iconization is a semiotic process that transforms the sign relationship between linguistic features and the social images to which they are linked. Linguistic differences appear to be iconic representations of the social contrasts they index – as if a linguistic feature somehow depicted or displayed a social group's inherent nature or essence. The ideological representation – itself a sign – operates in terms of images; it picks out qualities supposedly shared by the social image and the linguistic features (or rather, an image of such features), binding these images together. Their connection thus appears to be necessary, perhaps even "natural," because of the supposedly shared qualities. In this way iconization entails the attribution of cause and necessity to a connection (between linguistic behaviors and social categories – of people or activities) that may be only historical, contingent, or conventional.'

[75] It is hard to translate into music the negative connotation that biases have in science. We previously saw, when the concepts of condensation force and nucleation factors were introduced, that a confirmation bias can even play a positive role if it is inductively triggered by the musical material or by the piece as a whole – even to the point of trespassing into apophenia, as we saw when I mentioned the final *chor tacet* in Ligeti's *Lux Aeterna* in the paragraph on sonemes.

Stylistic features that are rigidly tied to a composer or a particular social bubble are in part unavoidable (we all have them to some extent), but it is important to point out that they hinder music fruition's tripartite model by introducing an implicit extra-musical level that must be agreed upon in advance – almost like a vocabulary – and the presence of this level can increase the risk of cherry-picking an audience or promoting fetishes. Inclusivity, richness, stratification of different layers, aesthetic and poietic awareness, have the power to give these normative choices the value of adjustable expressive registers (see next section), however music per se is not immune to the risk of ending up style-confined.[76]

Finally, a level agreed upon in advance is ultimately *a request* to the audience, and when the goal is to compose without requests a tribal appeal might not be the right thing to look for.[77]

Music ultimately thrives in indeterminacy and 'unfalsifiability', and even prisons are hardly *a bad thing* per se when applied to music. However it is possible to neutrally mention a reduction in the degrees of freedom that some choices imply and warn that self-imposed prisons are not the same as prisons imposed on others. What can make a difference here is that a normative force, instead of inductively emerging from the musical material, might emerge as having been imposed by a social bubble that says 'that is that way'. As for science, a good story about the danger of doing things because 'that is that way' – even to the point of discarding discordant data – is Popper's account of Alfred Adler's confirmation bias (Popper, 1962, p. 35).

[76] In this kind of pre-installed composer-audience relationship, to a 'tribal appeal' in the musical material must correspond in the audience what I. A. Richards referred to as 'stock response' (Richards, 1930 [1929], p. 15): 'More puzzling and more interesting are the critical traps that surround what may be called *Stock Responses*. These have their opportunity whenever a poem seems to, or does, involve views and emotions already fully prepared in the reader's mind, so that what happens appears to be more of the reader's doing than the poet's. The button is pressed, and then the author's work is done, for immediately the record starts playing in quasi- (or total) independence of the poem which is supposed to be its origin or instrument.'

[77] For the emergence of this concept within my portfolio, see p. 64. When musical elements carry implicit or explicit sociocultural references, keeping a low degree of tribal appeal means dealing with the latter on the basis of the specificity of the musical material and preserving the possibility of creating gradients (see the concept of 'stylistic gradient' on page 50.). This might approximate Adorno's ideal of 'universality and cohesion achieved by means of specificity' (Adorno, 1992 [1961], p. 273). See also *ibid.*, p. 272–273: 'At the same time, although such music should be completely free of anything irreducibly alien to itself or superimposed on it, it should nevertheless constitute itself in an objectively compelling way, in the musical substance itself, and not in terms of external laws. Moreover, wherever this can be achieved without running the risk of a new form of oppression, such an emancipation should also strive to do away with the system of musical co-ordinates which have crystallized out in the innermost recesses of the musical substance itself.' Another principle that is surprisingly related to this topic is computer networks' *robustness principle*, or *Postel's law*. The robustness principle was informally introduced with an early specification of the Transmission Control Protocol (TCP), and it is often quoted as 'Be conservative in what you do, be liberal in what you accept from others'. If we translate 'be liberal in what you accept from others' as 'accept listeners' diverse

Citations, stylistic contaminations and stylistic gradient In discussing normative choices we are still left with a missing piece. Some normative choices may not have a motivation that comes directly from the musical material, but may still be the result of expressive needs. These choices have the peculiar feature of being temporary, specific, transient (possibly varying within the same piece), aware of the aesthetic realm, not permanently tied to the identity of a composer, and in these traits they differ from tribal appeal. In our previous analogy with language variations they would appear close to linguistic registers rather than sociolinguistic styles, as they would consciously intersect shared meanings sedimented in the collective memory (therefore not entirely carried by the musical material) for specific reasons and *without permanently identifying with those meanings*.

'Musical registers' can emerge in different forms, and they usually involve a certain degree of awareness of the stylistic dimension. Slowly moving away from tribal appeal (and avoiding rigid schematisations) often close to the latter is the effect provoked by the unfiltered citation (more or less verbatim, almost like a collage), within an original composition, of pieces written by other composers in other epochs. There is probably no better way to point out the way in which abstract and superimposed forces can dominate music than by explicitly showing how different music sounded in different epochs or for different composers, and how little this has to do with the deliberate stances the particular composers took.[78]

For example, one of the effects of citing Mozart can be to realise that if it sounds very different from the surrounding material, this is mostly a consequence of the epoch both Mozart and the composer who cites him lived in, and has little to do with specific compositional choices. Realising that we are children of our time is after all only one small step away from realising that we are, ultimately, children (i.e. non-emancipated, subject to norms), and although explicit citations can force the awareness of a normative style into the conscious dimension, their bare presence

experiences and attitudes', then the degree of robustness of a musical material becomes inversely proportional to its reliance on listeners' uniformity in order to be understood.

[78] This can greatly vary depending on the context and distance between the different styles. See also Childs, 1993, p. 62: 'The immediate function of a citation as such for the listener depends on the presumption that s/he encounter it as *something different*, the degree of familiarity variable from perception as merely vaguely "other" to instant identification as that specific Bach fugue, in each separate case bringing with it whatever resonance that personal conditions and circumstances may make available (including, possibly ... the composer's – and perhaps other – commentary). A variety of kinds of recognition, dependent upon listener background, is clearly evident in Ives' use of "other" music.'

does nothing to contrast its pressure, but often tends to accept, or even reinforce (point out), its existence.[79]

A little farther away from tribal appeal, in a sort of neutral territory, lies stylistic contamination, or 'crossover'. This consists in the observation that different stylistic worlds do exist, and in the attempt to speak to, or simply play with, some of them. Contamination does not negate the social bubbles that each style relates to, or the super-imposed nature of these styles, but does weaken their normative power by relativising their importance. Some examples are Felipe Lara's *Double Concerto* (written in 2019 for the bassist and vocal improviser Esperanza Spalding), Hanna Kulenty's *Going Up 2* (1995), and many others.

Even closer to the 'register' field, almost like the voice of an actor who temporarily puts on an accent, lies music composed with a particular purpose, such as music for a scene in a theatre play, an event, or a particular atmosphere. The degree to which music becomes functional to other purposes is variable, and signs of it can already begin to appear when writing a ballet, or an opera, or even when setting a text to music without a scene (provided that delivering/illustrating/interpreting the text's original meaning is a goal and that de-structuring or obfuscating it – i.e. using it only as a pretext – is not an option).

Interestingly, for the less explicit cases English does not seem to have a word. 'Incidental music' might come somewhat close, although it is confined to the most explicit cases in which music, as the name suggests, is *incidental*, not important. The German *'Gebrauchsmusik'* ('music for a specific purpose', literally 'utility music') used to be a relatively good term, which would not in itself disqualify the importance of music, however in the 20th century it became overloaded with additional meanings, even becoming an insult, and so it is no longer usable. The Italian *'musica applicata'* or, equivalently, the German *'angewandte Musik'*, on the other hand, still retain their neutral definitions of 'music applied [to something else]', and are regularly used for music written for films, theatre or even ballets

[79] This 'pointing out' is sometimes referred to as the 'otherness' of the cited material. Cf. Childs, 1993, p. 68: 'Its "otherness" may be made effective by evoking, in unexpected context, the listener's response to "sounds like" accultured genre material: science fiction "outer space", a stagecoach in the old West, an Oriental waterfront, "going places doing things", a 1950s teen party, a menacing midnight stalker with a knife…'

(therefore Stravinsky's *The Rite of Spring* would qualify).[80] Notably, for historical reasons, the presence of a sung text alone, or even the presence of a sung text and a scenography (e.g., opera), is not enough to make a piece qualify as *musica applicata*.

These categorisations may be more or less subjective depending on the criteria chosen; nonetheless, if we can all agree that the fact that a piece works well for an external purpose cannot be sufficient to tie a permanent external reference to it; if we agree that using Mozart's Piano Concerto No. 21 for a film scene will not suddenly make the piece become incidental music, perhaps there is something more objective in a piece that we can look at in order to understand, if not the music's 'purpose', then at least whether it is more or less 'self-contained'.

Once again, a good criterion comes from the very fabric of the musical material. I remember that I was very impressed the first time I listened to Stravinsky's *Monumentum pro Gesualdo* (1960), because the musical discourse did not make any sense to my ears. It seemed to me that there was a constant and unjustified injection of new patterns ('energy'),[81] accompanied by a short-range resolution of these patterns ('volatility'),[82] which made it sound like a finely written score for a rich film scene rather than absolute music.[83]

Gesualdo was famous for choosing texts for his madrigals that contained sharp contrasts in close proximity – e.g., *'deh, vieni a raddolcire / l'amaro mio dolore'* ('ah, come and sweeten / the bitterness of my pain')[84] – and this, together with a widespread usage of word painting, carried major consequences in the frequency with which the musical material would steer away from its current direction.[85] Understandable when used to emphasise textual meanings, these changes of direction become enigmatic when used in absolute music.

[80] Henri Chiarucci gave this definition of *musica applicata* in 1968: 'Music [written] for films, [theatre] scenes, ballets, radio and television' ('Musica per film, di scena, per il balletto, la radio e la televisione', cited in Calabretto, 2015, p. 161).

[81] See 'Energy of the musical material' on page 33.

[82] See note 63 on page 39.

[83] The madrigals Stravinsky's chose are 'Asciugate i begli occhi', 'Ma tu, cagion di quella', and 'Beltà, poi che t'assenti'. As pointed out by Mason (1960, pp. 39–42), the substance of last two madrigals 'remains essentially as it was', whereas the 'alterations of the first madrigal are much more extensive', to the point that 'from bars 18 to the end Stravinsky entirely re-composes what Gesualdo wrote.'

[84] The poem set to music was *Dolcissimo sospiro*, by Annibale Pocaterra (1559–1593).

[85] I composed a text using a similar approach for my *Nessun lamento* (see p. 72), although my music reacts to it with less word painting and more long-range connecting elements.

If we tried to infer a lesson from this, we would say that when the fabric of the musical material constantly disconnects the source of new elements from the musical material's own past, we may have the impression that there is 'something else external' causing the novelty (even when there is not). This is certainly true when we listen to the soundtrack of a Mickey Mouse cartoon – indeed this extreme reactivity of music to images is called *Mickey Mousing* in film industry – can be true when we listen to pieces that contain a sung text, and can be true even in absolute music, as we see in Stravinsky-Gesualdo.[86]

A widespread lack of internal justifications in the buildup of the musical material – whether the cause is an extreme reactivity to the external world or a whim of the composer – does not cover all the cases in which the source of the musical material is substantially external (or at least non-internal). As we have seen, the very stylistic dimension can constitute the external element of a musical material that is otherwise well self-contained and internally coherent.[87] I believe that in such cases, only the composer's and the audience's simultaneous awareness of the contingency of these normative forces, usually evoked by the occasion for which the music was written, can mark a distinction from a tribal appeal, because the musical material alone cannot clarify. In 'topic theory' such an intentional normative force would be called a 'topic' or a 'characteristic figure'.[88]

[86] I would normally use the term 'descriptive music' for a music piece whose fabric is constructed in this way, regardless of whether it was actually composed to describe something or not. Calling *Monumentum pro Gesualdo* a piece of 'absolute music' however is something of a stretch, because the original madrigals did have in fact a text that got lost along the way. Although its volatility remains among the highest that I am aware of, other examples of 'pure' pieces that lean in the 'descriptive' direction and very often break the musical flow with new unexpected elements do exist – e.g., Liszt's Hungarian Rhapsody No. 2 (1847), to cite a famous example – however, their internal long-term coherence still usually remains one order of magnitude too high to reduce the musical discourse only to 'descriptive music'. Ultimately every piece must be discussed separately, in order to avoid approximations.

[87] For instance, a film composer might be asked to compose a piece in Mozart's style for a scene that has not yet been fully defined, and without any knowledge of the details and only knowing Mozart the composer will just end up composing a piece of absolute music (i.e. simply in Mozart's style and whose logic will be 'internal', non-reactive). The very stylistic choice at the root, however, will be external and dictated by a practical purpose.

[88] For a general overview of the subject see Ratner, 1980 and Mirka, 2014. The doctrine of the affections in the Baroque era played a similar role, focussing however on a smaller scale of the musical discourse compared to 'topics' (see, for instance, concepts like *descensus*, *saltus duriusculus*, *suspiratio*, etc., all of which referred to minute features of the musical texture rather than entire styles).

Finally, there is still one last step that we can take along our imaginary line that departs from rigid stylistic habits. The farthest away from tribal appeal, totally inside the 'register' field, lies the purely expressive use of normative forces. This is represented by the conscious appropriation of the stylistic dimension as a flexible tool, and the treatment of its vocabulary as acoustically productive (hence unpredictable).

The organic appropriation of stylistic features and signs sedimented in the collective memory, and the act of taking full advantage of their *functional* potential requires specificity and awareness; hence the approach is that of a *stylistic gradient*, which not only acknowledges the aesthetic dimension, but also tries to compose with it.

> Stylistic gradient
>
> *The presence of an evolution (or the possibility thereof) in the normative elements of the musical material, which attenuates their superimposed nature and frees their functional potential.*

It might be tempting to identify these normative elements with topic theory's 'characteristic figures' as well; however, although a partial overlap can exist, 'characteristic figures' are usually stylemes embraced by composers *because* of the extra-musical references attached, whereas a stylistic gradient might simply seek to explore the internal logic and the (acoustic) functional potential of a musical material that also *happens to share* stylistic features with other pieces, perhaps questioning or reinterpreting their 'meanings' (references) in the process.

For instance, the sound of a piano playing a rich texture with the legato pedal pressed, or that of a violin playing a *vibrato*, may not only contain references to eighteenth-century chamber music, because both still produce rich soundscapes that can be acoustically explored. Similarly, the sonic saturation that multiple voices have been able to produce in tonal music is still functionally able to provide a pole for creating saturation gradients. Even sound figures that are more closely tied to the tonal language, such as a descending stepwise legato interval played with louder dynamics on the first note (which can so easily suggest the idea of an appoggiatura), do not have to be avoided in order to steer away from the references that they carry – provided that this is a goal – because these references can easily be overwritten or amended by novel usages. In one way or another, however, such references will

eventually need to be addressed and cannot simply be ignored – and here is where the awareness of the aesthetic realm must come into play.

Stylistic gradient does not rule out citations, or contaminations. For instance, the numerous citations in Berio's *Sinfonia* (1969), due to the flexibility of the musical material, its plastic use of the aesthetic dimension and its willingness to enter into the musical worlds quoted, could be referred to as stylistic gradient rather than simple citations. What characterises a stylistic gradient is ultimately a good amount of flexibility and the focus on the 'productivity' of recognisable signs, without any desire to exhaust them in the process or sanction their death or their pastness – in short, it is the willingness to smooth their 'otherness'.[89]

* * *

This inventory This first journey ends here. I have attempted to catalogue my inventory in the most unbiased way possible, and yet a value system does implicitly emerge from it. We can trace it as follows:

1. Great depth of the musical material
2. A rich field of productivity
3. No forbidden processes
4. Highest possible permeability
5. Lowest possible tribal appeal

Creating an inventory in order to outline an ideal was not my purpose in collecting so many concepts. However a purpose did exist, which was the very possibility of taking this inventory into account as an integral part of the composition workflow – or, as in the case of this commentary, as an analytic lens.

We began the chapter by citing a neurological experiment. This has allowed us to collect dozens of concepts that are exquisitely compositional. Insisting on the field of music composition has allowed us to keep any possible *signified* of music safe

[89] For a parallel with Adorno's idea of *informal music*, see note 77 on page 45. I owe the suggestion of the term 'stylistic gradient' to my first composition teacher, Mario Guido Scappucci. For the emergence of the concept within my portfolio, see pp. 65 and 68–69.

from the risks of deterministic approaches that could arise from music semantics, and to focus conservatively on the *signifier* represented by the sound.[90]

The methodology so far has been deductive, and this is the reason we began the journey from the hard core of different disciplines and gradually moved towards music composition. The result falls well within this field, but it is still far from being an exhaustive composer's inventory – and not even all possible deductions from our starting points have been developed in this chapter. It is however often a missing piece in the 'typical composer's inventory', one that links together composition, semiology, psychology, physics, linguistics, mathematics and philosophy of art.

Its value is not purely symbolic or to be celebrated in the name of completeness. I have specifically searched for the tools that can ensure that music's indeterminacy and tripartite model are kept alive. I believe in fact that this universe is able to promote precious contradictions that composers need to solve each time they approach their art, and these constitute valuable assets and formative tools capable of providing depth to the musical material.

As the rest of this commentary will concretely apply some of these concepts from a compositional perspective, we can briefly dedicate the very end of this chapter to an example of the application of this dialectical universe from an analytical perspective. I will try to show, through a simple *Gedankenexperiment*, a possible non-trivial situation that encompasses a subjective category such as the composer's 'poietic' dimension, some 'aesthetic' scenarios, and two different musical materials.

Composer's poietic dimension (*Gedankenexperiment*)

> So serial thinking is something that's come into our consciousness and will be there forever: it's relativity and nothing else. It just says: Use all the components of any given number of elements, don't leave out individual elements, use them all with equal importance and try to find an equidistant scale so that certain steps are no larger than others. It's a spiritual and democratic attitude toward the world. The stars are organized in a serial way. Whenever you look at a certain star

[90] One more concept, closely related to the concept of musical energy, is still missing from the inventory: that of 'temporal spatialisation'. However, as this is strongly tied to a specific piece of my portfolio and the concept is relatively well-known in literature, I decided to present it from a more practical point of view in the next chapter (see ''Alive' and timeless processes' on page 59).

> sign you find a limited number of elements with different intervals. If we more thoroughly studied the distances and proportions of the stars we'd probably find certain relationships of multiples based on some logarithmic scale or whatever the scale may be.
>
> — Karlheinz Stockhausen[91]

Dialectical relationships with the audience's aesthetics (*Gedankenexperiment*) As we have previously seen, Ligeti showed that attempting to serialise all the parameters of the musical material can make the latter impermeable to further serialisation and increase its 'entropy'.[92]

An unexpected consequence of this is the flattening out of gradients in a similar way to techniques that were *born* with a relatively small degree of freedom – like, for instance, ancient modal counterpoint. Therefore, if a casual listener were surprisingly able to put a structuralist piece by Stockhausen together with a piece by Obrecht in the same generic box of 'atmosphere music' – or *music that does not or cannot develop* – this would be so because the relative scarcity of gradients in the musical material had been identified as the most salient and productive aspect of the piece. We would then say that such a low gradation would be both pieces' main *'yield of productivity'* for the listener. But Obrecht's music is also rich in historical references, and for many listeners the semantic dimension will likely favour stereotypical conventions and *'fertile semantic targets'* such as 'church', 'cathedral' or 'prayer' – while words like 'extreme', 'messy', 'dissonant' might be promoted for Stockhausen, for the same stereotypical reasons. In this case a *'tribal appeal'* (historical contextualisation and focus on a normative force) would become the most productive aspect of both pieces. Both processes (low degrees of freedom and historical reference) can be summed up as the *'fields of productivity'* of the two pieces.

The *Gedankenexperiment* above shows how very distant composition techniques could, in theory, share intrinsic non-subjective factors that are capable of promoting a similar yield of productivity. It also shows how compositional choices can promote

[91] Cott, 1973, p. 101.
[92] See note 10 on page 6.

fertile semantic targets that directly conflict with the composer's poietic dimension (e.g., 'messy' vs. 'organised').

This kind of analysis can in part allow us to guess some of the elements that a musical material might promote as productive. Their prevalence however depends on non-trivial factors and must be always assessed on a case-by-case basis.

Chapter 3

Pale Blue Dot, for orchestra

> We were wanderers from the beginning.
>
> — Carl Sagan[1]

In the famous nineteenth-century debate on 'the beautiful in music', it seems that no other option was possible beyond the belief that music always delivered an extra-musical programme – even despite the composer's intentions – and the opposite belief, that the 'beautiful' in music had to be completely self-contained in its own world.[2] A third interesting possibility had seemingly been ruled out: analogies –

[1] Sagan, 1994, xi.

[2] Cf. Hanslick, 1957 [1854], p. 48: 'To the question: What is to be expressed with all this material? The answer will be: Musical ideas. Now, a musical idea reproduced in its entirety is not only an object of intrinsic beauty but also an end in itself, and not a means of representing feelings and thoughts. The essence of music is sound and motion.' See also Paddison, 2001, p. 335: 'Thus, for Hanslick, music is a play of sounds, a kind of sonic equivalent of the kaleidoscope, as forms, symmetries, structures (although the metaphor of the kaleidoscope is in many respects an unfortunate and misleading one, as it introduces an unintended element of arbitrariness into Hanslick's argument).' On the side of *programme music*, see Liszt, 1950 [1855], p. 863: 'The painter-symphonist, however, setting himself the task of reproducing with equal clarity a picture clearly present in his mind, or developing a series of emotional states which are unequivocally and definitely latent in his consciousness – why may he not, through a program, strive to make himself fully intelligible?'. About the whole debate, see Grimes, 2012. On a side note, I believe that the impossibility of reducing a musical element to a univocal *signified* (i.e. an external reference) ultimately brings the semiologists' tripartite model closer to Hanslick than to Liszt – though with the caveat that subjective or approximate meanings are in fact possible; cf. Nattiez, 1990 [1987], p. 9: 'Now, musical meaning might be assigned some verbal translation (a certain gesture may mean "the prolongation of the dominant" or "the moment of the protagonist's death"), but it cannot be *limited* to that verbal translation. The temptation to do so is often difficult to resist, doubtless because we are never so *aware* of what the meaning of something in a nonlinguistic domain may be as when we attempt to explain that nonlinguistic domain in verbal terms. Imberty has written lucidly on the dangers of this temptation: "the musical signifier refers to a signified that has no exact *verbal* signifier ... musical meaning [sens], as

not to deliver 'the true meaning' of music, but simply to help understand the sound – independently of how much 'absolute' this is.

Prof. Roger Marsh once told me an anecdote about a student who showed him a score in which different parts moved at different paces. To try and explain that, the student said 'Think of a motorway. There you have faster lanes and slower lanes. The same happens in my piece.' So Roger asked 'Ah! So your piece describes a motorway!' The student replied 'Not at all. My piece is just music. But you will understand it better if you think about a motorway.' The student was describing an analogy.

Pale Blue Dot is the name of a photograph of Earth taken in 1990 by the *Voyager 1* space probe from a distance of 6 billion kilometres (Figure 3.1). Twenty-three years later, the *Cassini* spacecraft sent an homage to *Voyager 1*'s picture from a distance of 1.44 billion kilometres. *Cassini*'s photograph is known as *The Day the Earth Smiled*, or *Cassini's Pale Blue Dot* (Figure 3.2).

Pale Blue Dot is also the name of a piece for orchestra that I wrote. My piece is not about the *Voyager 1*'s and *Cassini*'s photographs, nor is it a reminder of how small Earth is compared to the rest of the universe. Yet, both images can help explain what happens in the piece.

The two photographs are dominated by bands of light (artificial in one case, natural in the other) and the timeless immensity of the cosmos, with the exception of a small blue dot: Earth. And just as in those photographs, most of the material in my piece involves sound processes that appear immense, timeless, lifeless and uncontaminated, with only a tiny insignificant dot 'that has life in it'. I call the part 'that has life in it' roughly forty seconds of music in a piece that lasts more than twelve minutes.

Now we need to clarify the way in which a musical material can be described as 'alive' or, instead, 'timeless', because this is, too, an analogy – and by 'alive' I do not mean 'more exciting' at all. But to do that, we need to discuss 'spatialisation' first.

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soon as it is explained in words, loses itself in verbal meanings, too precise, too literal: they betray it" (1975: 90-91). For music, it is paramount not to define meaning solely as a reflection of some *linguistic* meaning.'

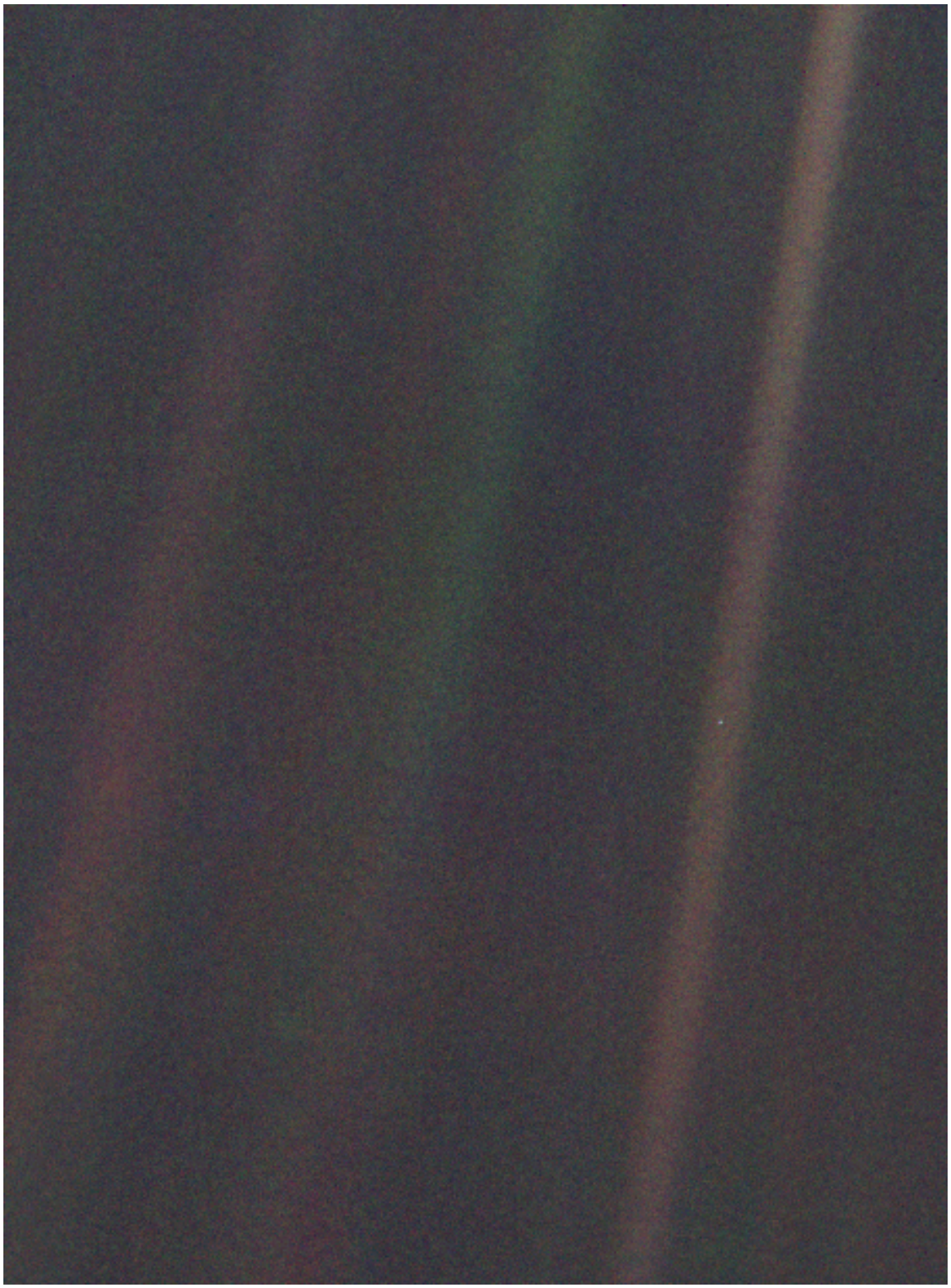

Figure 3.1: *Voyager 1*'s *Pale Blue Dot*. The light bands across the photograph are camera artefacts. Earth appears as a tiny blue dot almost halfway up the rightmost band. Photo by NASA Jet Propulsion Laboratory. Public domain.

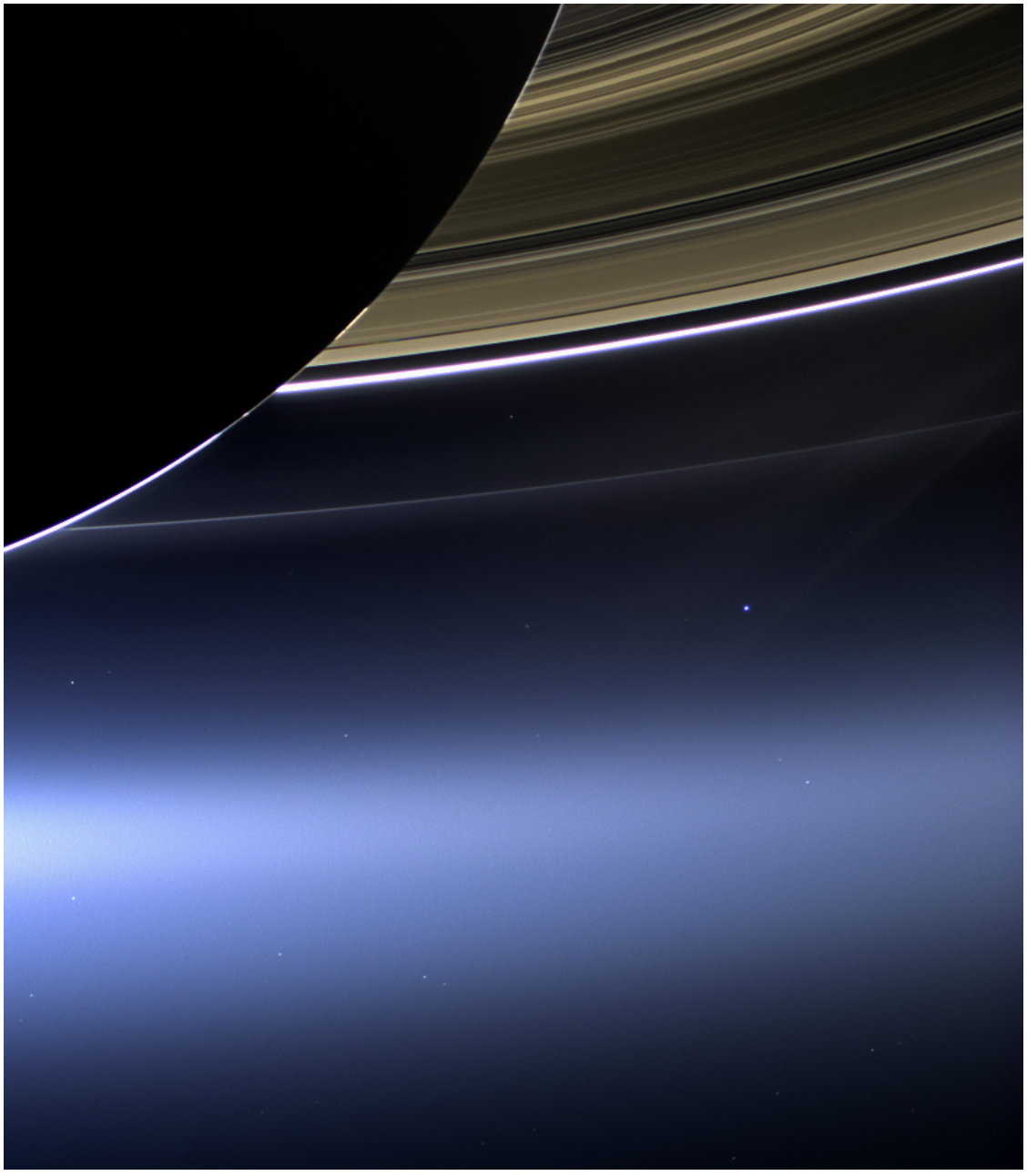

Figure 3.2: *Cassini*'s *The Day the Earth Smiled* (a.k.a. '*Cassini's Pale Blue Dot*'). Earth and the Moon appear as a blue dot at centre right. Photo by NASA Jet Propulsion Laboratory. Public domain.

3.1 'Alive' and timeless processes

In music, the word 'spatialisation' can describe two different processes, which in composers' minds may have attracted each other more than once, though they are unrelated. In the first meaning – the more widespread[3] – the word refers to 'acoustic spatialisation', which is the account of the physical performance space as one of the musical parameters. This usually appears at the beginning of a score as a blueprint of a concert hall, with the position of audience and performers carefully notated. It is a fascinating as well as an old idea, which already bore beautiful fruits during the early ages of the Venetian school.[4] In the second meaning, on the other hand, the term refers to 'spatialisation of the flow of time', and this is a concept that has had a profound impact on the way it has been possible to organise the musical material from Webern onwards,[5] yet it is rarely addressed as such.[6] In order to present *Pale Blue Dot* we need to dwell on this second meaning.

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[3] Often literature refers to the first meaning using 'spatialisation' alone, whereas some longer wording, more or less similar to 'spatialisation of the flow of time', is used for the second meaning (itself rarely discussed).

[4] Cf. Gabrieli's *In Ecclesiis* (1615), for example.

[5] On the importance of Webern in this change of perspective, cf. Pousseur, 1960 [1958], p. 2: 'Webern's music is a turning-point; looking one way, it is the end of romantic and also of "new" music, because it condensed music's material down to very thresholds of perception.' See also Ligeti, 1965 [1960], p. 10: 'Webern's music brought about the projection of the time-flow into an imaginary space by means of the interchangeability of the temporal directions, provoked by the constant reciprocity of the motivic shapes and their retrogrades (it seems here to be a matter of indifference which is regarded as the original shape). This projection was further strengthened by the "grouping round a central axis, which implies a conception of the time-continuum as 'space'" [Eimert: "A Change of Focus", die Reihe 2, p. 35], and by the fusion of the successive and the simultaneous in a unifying structure. However, this "space" is not yet quite "timeless", even though its unfolding in time can no longer be compared with the flow of the developing forms. Webern's structures seem, if not to move forward in one direction, at least to circle continuously in their illusory space, driven by the strength of the intervallic tensions and shifting accents.' On the other hand, in commenting on some of the works of Stockhausen, Boulez and Cage, Adorno seems to exclude Webern from this innovation (Adorno, 1992 [1961], p. 272): 'Nevertheless, my reaction to most of these works is qualitatively different from my reaction to the whole tradition down to, and doubtless including, Webern's last works. ... It may well prove to be the case that serial and post-serial music is founded on a quite different mode of apperception, in so far as music can be said to be based on apperception at all. In traditional listening the music unfolds from the parts to the whole, in tune with the flow of time itself. This flow – that is to say, the parallel between the temporal succession of musical events and the pure flow of time itself – has become problematical and presents itself within the work as a task to be thought through and mastered.'

[6] Sometimes I wonder if acoustic spatialisation becoming so fashioned in contemporary music is simply the consequence of failing to capture the phenomenon of temporal spatialisation, with the former acting as a sort of totem for the latter...

In physics, time is a special dimension with a one-way direction known as 'the arrow of time'. The presence of an arrow is often linked to the second law of thermodynamics, which establishes the irreversibility of physical processes as entropy increases. Not all physical processes, however, are irreversible; some, often idealised ones, such as the laws of motion in classical mechanics, can exhibit time reversibility.[7] Thus, we can watch the footage of a semitransparent liquid from which a blacker and blacker component flows into a bottle and understand that we are watching in reverse as the contents of an ink bottle are spread out into water, but we cannot watch the footage of a moon orbiting a planet and understand whether or not we are watching it in reverse.

In music, too, some processes can exhibit an 'arrow of time' more than others. Schönberg's concept of 'liquidation',[8] for instance, is an example of an irreversible process; a melody in which characteristic intervals become more and more diluted into a uniform flow of notes conceptually even resembles a bottle of ink that spreads into water until all gradients disappear. There, a gradual loss of information about characterising aspects of the musical material occurs – there is no going back – and if this loss happened in the reverse direction (i.e. if characteristic elements gradually emerged from a homogeneous neutral material) it would acquire an opposite meaning with respect to the tension-release polarity and the brain's pattern processing, injecting energy into the musical material.[9]

On the other hand, there are musical processes that do not show a similar directionality, either because of an intrinsic temporal symmetry (think of a *crescendo dal niente* followed by a *fortissimo* followed by a *diminuendo al niente*, for example), or because of an asymmetry which is tension-agnostic (for instance, the asymmetric shape of the attack of a note played by a violin would make it sound completely different if the recording of a violinist were played in reverse, to the extent that it would sound like a note played by a different instrument; however this asymmetry would be neutral with respect to tension, and such a reversal would appear equally tension-flat and would simply be processed as 'the same pitch with a different timbre').

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[7] See 'T-symmetry'.
[8] See note 19 on page 18.
[9] See 'Energy of the musical material' on page 33.

Thus, temporal spatialisation in music consists in the prevalence of processes that do not clearly point out the arrow of time, and this prevalence is able to shape the temporal dimension as a space-like dimension that can almost be walked through in either direction.

Dropping the arrow of time means also weakening the cause-and-effect relationship. And without that, musical events can no longer be perceived as the cause of other musical events, but at best as 'related' or 'alike'.[10] When a transformation appears reversible (like the orbit of a planet) or directionless (without any game of tension and release), we may perceive that the sound world is not evolving at all (despite the acoustic material is actually changing) and that instead it is we who are changing perspective. Or, rather, everything is in motion with respect to everything else, but all objects can always find a frame of reference for which everything is still. And thus, the loss of the cause-and-effect relationship can produce staticity in music even in the presence of change, because what is abolished is the idea of 'development' itself.[11]

[10] Cf. Adorno's comment on music's 'pseudomorphosis' into painting: 'Music that "paints", which nearly always suffers a loss of temporal organization, lets go of the synthesizing principle through which, alone, it assumes a form approaching space' (Adorno, 1995 [1967], p. 67). See also Ligeti, 1965 [1960], p. 16: 'Schönberg, despite his radically new filling-out of musical substance, was concerned to preserve the empty shell of the developing forms, and in this way he considerably delayed the process which we shall refer to as the "spatialization of the flow of time". But this process could no longer be held back when all the remains of the hierarchical forms had disappeared. Webern's music brought about the projection of the time-flow into an imaginary space by means of the interchangeability of the temporal directions, provoked by the constant reciprocity of the motivic shapes and their retrogrades (it seems here to be a matter of indifference which is regarded as the original shape). This projection was further strengthened by the "grouping round a central axis, which implies a conception of the time-continuum as 'space'", and by the fusion of the successive and the simultaneous in a unifying structure. However, this "space" is not yet quite "timeless", even though its unfolding in time can no longer be compared with the flow of the developing forms. Webern's structures seem, if not to move forward in one direction, at least to circle continuously in their illusory space, driven by the strength of the intervallic tensions and shifting accents.'

[11] Cf. Pousseur, 1960 [1958], p. 15: 'When irreversible moments of time are thus scattered in a static, quasi-spatial arrangement of inorganic states, composition takes on the character of description, a character that makes it necessary for composition and listening to be acts of definition. Whatever may have been selected and arranged, in a system of elements universally related to each other; however differentiated the manner in which the basic material may have been developed; the mere existence of matter does not legitimize its derivatives, nor do these indicate their origin. Material is always stated as form, and nothing else is present on which to base an explanation of it, so it can correspond only to other material of the same kind. Thus one thing illuminates another, until material correspondence is produced within a system of transformation.'

***Pale Blue Dot*'s cosmos** A spatialised flow of time is what constitutes 'the timeless part' of *Pale Blue Dot* (the piece). Here the musical material is made of sound events that do not develop, but simply change, slowly and regularly, almost as if it is not the actual process that is experiencing any evolution of sort, but our point of view is shifting in a quasi-predictable way. We are talking about simple transformations on a Cartesian plane, that do not require the non-linear complexity and unpredictability that lifeforms, or simply 'energy-consuming entities', are capable of. Most of the sound events in *Pale Blue Dot* are timeless processes in this way.

This process-based cosmos is made of long and plastic soundscapes and timbre-dominated macro-events – the same world often found in electronic music.[12]

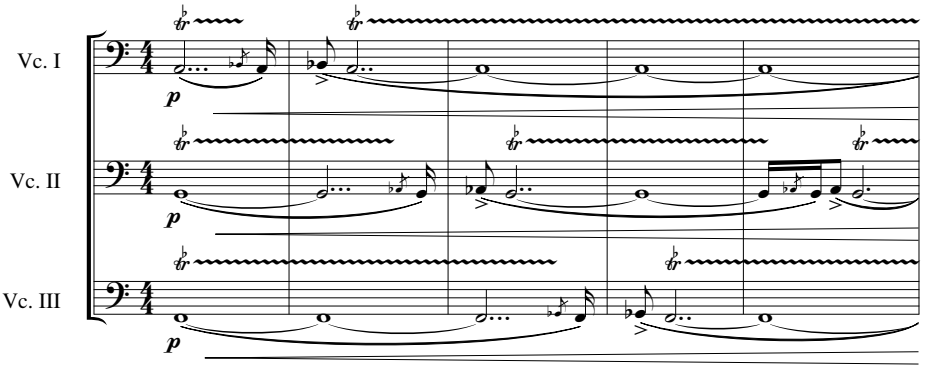

Figure 3.3: *Pale Blue Dot*'s 'cosmos' (mm. 1–5)

Although these events constitute the largest sections of the composition, they represent only an incomplete part of a bigger and more complex picture, which would be missing a piece without its tiny blue dot.

The 'pale blue dot' The musical flow experiences a change at about 5/8 of the piece, where for roughly 40 seconds a melody appears as clearly evolving in time (mm. 235–251). This evolution happens in such a non-linear and non-trivial way

[12] Cf. Adorno, 1995 [1967], pp. 67–68: 'Time is not spatialized into a geometric coexistence, but rather – precisely as time – planned, disposed of, organized from the top down as a whole, as only visual surfaces once were. Equivalent to the large-scale procedure that so disposes, that treats time like a cartoon, there is a no less painterly procedure on a small scale. It expresses itself most clearly in electronics, but can also be observed in the realm of music that makes use of more or less traditional methods of sound production.'

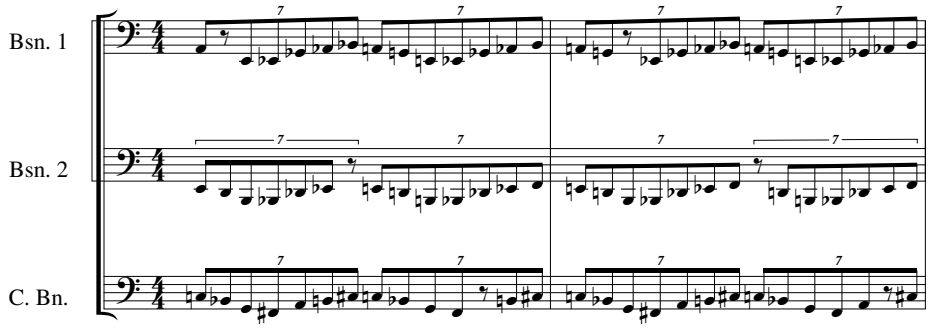

Figure 3.4: *Pale Blue Dot*'s 'cosmos' (mm. 287–288)

that it rules out timelessness and can only manifest as a narration about irreversible processes that know about birth and death.

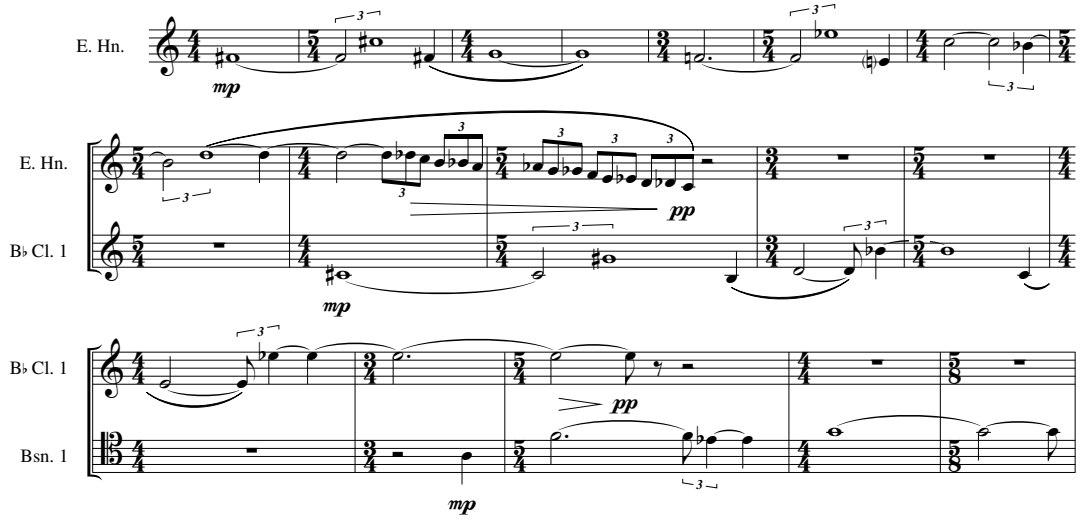

Figure 3.5: *Pale Blue Dot*'s 'Earth' (mm. 235–251)

In these forty seconds the musical discourse becomes predominantly motif-based – whereas in the rest of the piece it is process-based, or event-based. The two layers ('Earth' and 'cosmos') are highly permeable[13] with respect to each other, and this allows a further 40 seconds of 'melodic reverberation' (until m. 271).

[13] See 'Impermeability of the musical material' on page 32.

3.2 Discussion

When I began working on this piece I did not have any formal proportions planned beforehand, and so I could not know whether I would end up with a 'tiny blue dot' or a 'big living universe'. I did know from the beginning, however, that I wanted to make two different compositional approaches interact.

I understood 'spatialisation of the flow of time' only as an abstract notion, compartmentalised in my mind from early readings and limited experiments. Unconsciously, however, it was very clear what I was looking for. Naively, I first labelled the first compositional approach as 'the electronic-music way',[14] then I labelled the second one as 'the developing way'. I knew they were both imprecise definitions, but I was also sure that they were labelling two palpable ways of organising music – certainly more palpable for me than the technical terms 'spatialisation of the flow of time' and 'ordinary temporal flow'.

I also understood that I was not dealing with simple neutral compositional techniques, but with entire schools of thought about how music 'should behave'.[15] And yet, the idea of using ethical stances in a 'functional' way was my own personal stance, and the curiosity about how these two worlds might react to each other was my motivation.[16]

From afar, I had reminiscences of Ligeti's *Lontano* (1967) in mind, if not as a direct influence on the musical material, at least as an example of a large 'spatialised'

[14] Cf. Adorno, 1995 [1967], pp. 67–68, quoted in note 12 on page 62.

[15] *Ibid.*, p. 68: 'The form [*Gestalt* – Tr.] of this kind of music is thoroughly homophonic; it is composed, as people like to say nowadays, of "blocks". The concept of line is not applicable to it, any more than it knows true polyphony; in its place, the sounds, in their simultaneity, have become extraordinarily nuanced and differentiated in themselves, exploiting discoveries made by the early Stravinsky, among others. The things that in traditional music, including Schoenberg, Berg, and Webern, apply specifically to the temporal dimension – the entire art of development and thematic transition – become irrelevant to the composers; at best, tone progressions in the sense of the newly available continuum still retain something of that art. The most recent musical production is so uniform, where these characteristics are concerned, that one is almost tempted to suspect some external compulsion, although one cannot help hearing a certain impoverishment, the withering away of numerous musical elements in favor of the manipulation of the overvalued tones. In general, in the most recent development, an extreme measure of differentiation, of sophistication in the use of means, goes hand in hand with primitivism, a kind of forgetting of what has been achieved.'

[16] I am usually averse to rigid normative choices that cannot be exploited in a functional way; and so, when possible, I try to guess the most likely 'fields of productivity' of all the processes present in what I am composing and create gradients with them. See also 'Stylemes and tribal appeal of the musical material' on page 41.

soundscape.[17] As for the interaction between these different sound worlds, however, I did not know any example from literature as polarised as my piece would become, in which such two ways of organising the musical material – which are rarely seen close to each other – are presented as two coexisting poles of attraction. Nevertheless, I knew that this kind of inclusivity would drastically increase the field of productivity of the musical material[18] and allow music to intercept diverse listening perspectives, thus making the piece a valuable sample for this commentary.

Such a polarisation of two competing normative forces is ultimately an example of 'stylistic gradient'.[19] Used alone and without a dialectical contrast, I am persuaded that any of these two normative forces ('cosmos' and 'earth', i.e. temporal spatialisation and normal temporal flow) would just have remained confined to an invisible (implicit) style – and in all probability, without the *function* that emerges from their contrast, I would have simply avoided writing about 'spatialisation of the flow of time' in the first place and this would become a silent feature of the musical material. Instead, the contrast creates a gradient capable of supplying both forces with a function that is no longer confined within the stylistic dimension, which becomes a variable internal part of the musical flow.

[17] More than once I thought that the relationship between early electronic music and Ligeti's large orchestral works somewhat resembles the relationship between the spread of photography and the first Impressionist painters (i.e. advancements that were technological in nature provoked a shift of focus in the artistic material).

[18] See 'Field of productivity of the musical material' on page 31.

[19] See 'Citations, stylistic contaminations and stylistic gradient' on page 46.

Chapter 4

Fragments of a lover's discourse, for string quartet

> *I Love You*
> *je-t'-aime* / I-love-you
> The figure refers not to the declaration of love, to the avowal, but to the repeated utterance of the love cry.
>
> — Roland Barthes

Fragments d'un discours amoureux was the title of an essay written in 1977 by Roland Barthes. The book was revolutionary at the time, in that it methodically applied the powerful tools of structuralism to dissect the capricious phenomenology of love. It also had a peculiarity: it was truly a collection of detached fragments, in which each fragment was an autonomous microcosmos within a coherent but loose discourse.

The title of my piece for string quartet is an explicit homage to Barthes' essay, made possible by a lucky coincidence in the music. The reason is precisely that the book's flow constitutes a good metaphor of what happens in the piece, in which two movements can be aptly described using analogies with different moments of a lover's life; distinct, and yet part of the same discourse. I did not have Barthes' essay in mind when I composed the piece, but a lover's discourse – any lover's

discourse – did come to mind as soon as I started to leave my unconscious dimension and realise more consciously what I was doing.[1]

The two movements are linked together through their incipit, though they sound quite different overall. In some ways the second movement as a whole could be considered as a sort of development of the first movement – or, I would rather say, its consequence. Yet an internal logic is also what prevails in the second movement.

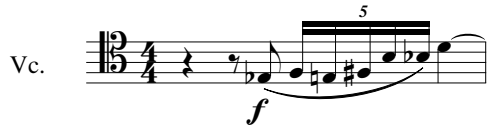

Figure 4.1: Incipit of *Obviously it's love* (violoncello)

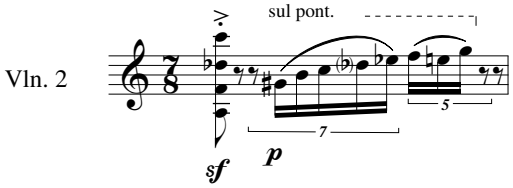

Figure 4.2: Incipit of *Back me up!* (2nd. violin)

4.1 First movement: *Obviously it's love*

The first movement, *Obviously it's love*, lasts about five minutes and begins with a cello opposed to the three other string instruments, almost like different points of view that do not try to find a synthesis (the title is both evocative and ironic). *Obviously it's love* represents a single moment of drama and an attempt to leave the territory of psychoacoustics and reach the realm of psychology, because here the sound processes do not only represent acoustic phenomena, but also mirror human interactions.

The movement's material relies on a relatively narrow timbral spectrum (expressed by the traditional idioms of string instruments) and mainly diversifies itself

[1] Although the literal translation would be *Fragments of a Lover's Discourse*, English translators usually render the book title as *A Lover's Discourse: Fragments* (Barthes, 1978 [1977]).

through the motivic and gestural dimensions. The motivic dimension is perhaps where the resemblance with human behaviours manifests itself most intensely, with melodies that interact almost as if they are mimicking a dialectic confrontation between diverging perspectives.

Such an external reference is not explicitly implied anywhere by the music – unless we include in the music what a title may or may not suggest[2] – yet, the motivic elements are clear, permeable to each other,[3] and distinct enough to be able to match familiar human characters with ease. Perhaps listeners' interpretation will easily and spontaneously 'condensate' around these as one of the movement's most exposed 'meanings' even without textual suggestions, or perhaps it will not; whatever that will be, such an extra-musical reference – which can only rely on a title and the clarity and permeability of some motifs to 'condensate' – is, strictly speaking, absent in the score, and therefore is to be considered only part of the piece's poietic dimension. I did not begin composing the movement thinking about it, but I completed the last sections once I was persuaded of its presence. Normally, when I present the piece, I avoid 'pushing' this semantic analogy (except, sometimes, for a brief mention in programme notes), because recognising it or being sceptical about it is irrelevant to the appreciation of the piece.

The overall attitude of this first movement is in contrast with that of the second movement, in which the musical material is exposed more plainly within the timbral and perceptive dimensions. There the lenses of an extra-musical reference are not as strong – although, as we will see, they are not absent.

A blurred photograph The expressive dimension of the first movement is largely carried by its strong stylistic character and its recognisable references to late Romanticism.[4] These however are transfigured and partially lost, and the numerous *glissandi* function like the blurred spots outside the focal point of a photograph that captures a scene we still remember in detail and can recall clearly without much effort. Although they are blurred, the *glissandi* of this movement are still able to evoke fast or bravouristic passages or other relics of classicism, but they also create a distance through their indeterminacy.

[2] See 'Condensation force and nucleation factors' on page 39.
[3] See 'Impermeability of the musical material' on page 32.
[4] Examples of these references are the melodic narration and elements traditionally born within the tonal language (such as appoggiaturas, wave-like contours of melodies, etc.).

Stylistic gradient Yet, there is closeness too. If on the one hand the stylistic dimension works as a dialectic pole and, thanks to the *glissandi*, an unreachable horizon, on the other hand it provides a vocabulary which is still treated as productive.[5] The approach of a 'stylistic gradient' unfolds here as the free re-appropriation of the stylistic features and signs of late Romanticism, taking full advantage of their functional potential and extending the colour palette of the 'typical' sounds of contemporary music in complete freedom.

4.2 Second movement: *Back me up!*

The second movement – *Back me up!* – also lasts approximately five minutes. Here the four string instruments constantly ask each other to be 'backed up', as the title suggests, in the new musical ideas that from time to time one of them proposes. These are often in contradiction with what is being played at that moment, but are nevertheless welcomed by the ensemble (although not always). The musical flow is rhapsodic, and the whole picture resembles a group of actors that alternate in leading a discourse that is improvised in the moment. To give a metaphor for explaining the general setting, the piece might feel as if four actors continuously looked to one another for new ideas on how to keep improvising a story, always finding in their complicity the ideas they were looking for. The movement is richer in gestures compared to the previous movement, and melodic development plays an important role here too.

4.3 Discussion

In *Fragments of a lover's discourse* the stratification of compositional processes is organised with respect to the temporal development, and the two movements, separately, constitute two different groups of processes.

In the first movement (*Obviously it's love*) melodic construction and harmony prevail, whereas a continuous flow of new macro-events and gestures – almost in an improvisational style – prevails in the second movement (*Back me up!*).

[5] On the meaning of the term 'productive' in the context of this commentary, see p. 15.

The piece finds its place within this portfolio by means of the stratification of musical ideas and the strong variety of textures and styles that is created by grouping these two movements together. The simple welcoming of stylemes of late Romanticism used with an expressive purpose (first movement) is a form of stylistic gradient. Unlike *Pale Blue Dot*, where the normative forces employed did not carry a heavy baggage of collective memories, here an unavoidable semantic dimension linked to late Romanticism had to be taken into account.

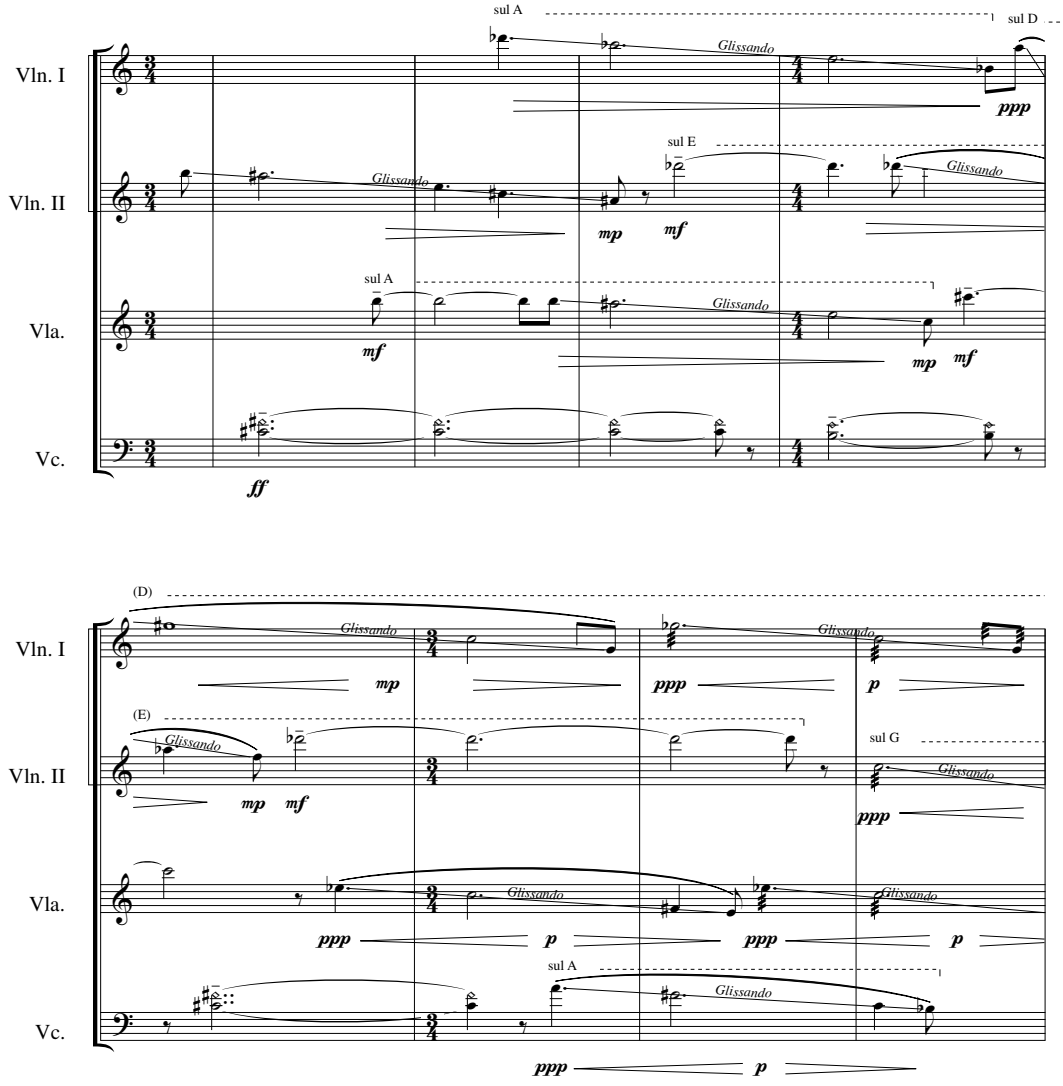

Figure 4.3: 'Shepard-Risset glissando' (*Back me up!*, mm. 44–52)

Chapter 5

Nessun lamento, for male voice choir and 'halved' orchestra

> Love, which absolves no one beloved from loving,
> Seized me so strongly with his charm, that,
> As thou seest, it does not leave me yet.
> Love brought us to one death.
>
> — Dante Alighieri, *Inferno*, canto 5[1]

Nessun lamento is a piece for male voice choir and 'halved' orchestra. It is the only piece of this portfolio that involves an extra-musical 'programme', imposed by a text – a poem of my own.

The Italian words '*nessun lamento*' in English translate as 'no lament', and in fact the piece is an 'anti-lament', which rather than indulging in pain tries to pass through it and leave it behind. The typical ostinato bass of baroque laments (*basso del passacaglio*) becomes here a steady and free 'walking bass', constantly exploring new territories. The point of view is not lonely, but choral; the end is not tragic, but bright. And yet, even if the darkness is only temporary, the piece is not afraid to walk great lengths in the dark.

The peculiar instrumentation, the dense stratification of contrasting elements and textures, the 'programme' – which shapes the general mood – the rich set of

[1] These are the words that Dante Alighieri gives to Francesca da Rimini in the 5th canto of his *Inferno* (1305 ca., vv. 103–106), as translated by J. D. Sinclair (Alighieri and Sinclair, 1939). The original Italian text is '*Amor, ch'a nullo amato amar perdona, / mi prese del costui piacer sì forte, / che, come vedi, ancor non m'abbandona. / Amor condusse noi ad una morte.*'

motives and rhythms, the dense counterpoint, are the traits that make the identity of *Nessun lamento* remarkably strong.

5.1 The composition of the text

The work on this piece began with the poem in Italian of the same name, which I completed only after having written down the first notes of the piece. The text is comprised of twenty-six free verses organised in six stanzas of different lengths. When read out loud, the graphical indentation at the beginning of each verse approximately indicates longer and shorter pauses (or simply inner breaths), whereas the stanzas' endings mark the longest pauses. Set to music, these recommendations are dealt with freely.

Being the author of a text that I knew would be set to music allowed me to 'think musically' even while I was still writing the verses. From Gesualdo I had learned about the power of sharp contrasts at a close range,[2] and so I wrote down some of my own:

> *'... quella gioia / tormentata... '* ('... that joy / tormented... ')
>
> *'Volammo. / Ci lasciammo.'* ('We flew. / We parted.')
>
> *'... schiusero il fiore che ci sfinì.'* ('... opened the flower that exhausted us.')
>
> *'E quel bel gioco / sfiorì... '* ('And that beautiful game / withered... ')
>
> *'... nella paurosa rimembranza / spero.'* ('... in the fearful remembrance / I hope.)
>
> *'... d'amore tremante e di mancanza.'* ('... with trembling love and absence.')

I also knew that I wanted the choral dimension to prevail, and so the first-person singular appears only in the last nine verses. However, I also wanted to render the idea that any plurality was merely a projection of one single person, and so the choir needed to be a male voice choir, representing a sort of multiplication of the same point of view.[3]

---

[2] See my comments on Stravinsky's *Monumentum pro Gesualdo* on p. 48.

[3] Behind the choice of using male voices only there are also acoustic reasons linked to the instrumentation and the sound world chosen.

Original Italian text

Nessun lamento
ci ridarà
quella gioia
tormentata
dell'alba rubata ai sogni.

Volammo.
Ci lasciammo.

I corpi svestiti
di sguardi e abbracci
spauriti
schiusero il fiore che ci sfinì.

E quel bel gioco
sfiorì
tra freddi accenti
e voci fioche e lontane.
Ci lasciammo

senza avvisi né lutti.
E nella paurosa rimembranza
spero.
Ti cerco,
carico
d'amore tremante e di mancanza.

Ma nel pianto guardo invano.
Nella gioia
vivendo
ti cercherò.

English translation

No lament
will give us back
that joy
tormented
of the daybreak stolen from dreams.

We flew.
We parted.

The bodies undressed
of glances and embraces
afraid
opened the flower that exhausted us.

And that beautiful game
withered
among cold accents
and voices faint and distant.
We parted

without warning or grief.
And in the fearful remembrance
I hope.
I search for you,
loaded
with trembling love and absence.

But in the tears I look in vain.
In the joy
throughout life
I will search for you.

5.2 The 'halved' orchestra

Instrumentation was a pivotal moment in the process that led to *Nessun lamento*. I remember that it began with me trying to give life to some adjectives that would not leave me alone: choral, compassionate, dark, dirty, smoked, velvety, vigorous (I am recalling from memory). That research culminated in a male voice choir and a 'halved' orchestra.

There are many possible ways of 'halving' an orchestra; in this piece 'halved' means: three flutes, three horns, three trumpets, three trombones, a tuba, timpani, percussion, a piano, a male voice choir, cellos and contrabasses. It is an unbalanced formation, which disproportionately favours the lower register (the piano is almost always used in the low register too). It required a long planning process in order to function, and yet it is capable of immense power.

Its most noticeable feature is the crowdedness of the brass section compared to the other families of instruments. This disproportion was already present in the vague soundscape that I glimpsed when I started composing the piece, and trying to make it work gave me more than one headache.

I did not find many pieces in literature with a similar instrumentation, and I found precisely zero with exactly the same instruments. The piece that comes closest to it (but with important differences in the instrumentation chosen) is Petrassi's *Coro di morti* (1941), to which I left more than one homage. Since Petrassi's *Coro di morti* was heavily influenced by Stravinsky's *Symphony of Psalms* (1931), my piece may also have some similarities with Stravinsky's piece too.

5.3 The form

The form of this piece is shaped by the text. However 'the text' does not mean 'the choir': the poetry is set into music by the entire orchestra, and from time to time a *tacet* in the choir is how the poem unfolds. The structure of the piece can be schematised in four main moments:

1. The first four stanzas mark the first and longest section of the piece (roughly six minutes, measures 1–122), until a strong enjambment between stanzas – '*Ci lasciammo / senza avvisi né lutti*' ('We parted / without warning or

grief') – leads to the next section (exactly where the enjambment is – the latter emphasises a separation mentioned in the text).

2. The second section is an instrumental scherzo that leaves the choir silent on an unconcluded sentence (*chorus tacet*). This section lasts about three minutes (until 9′ 00″, measures 123–201, *Un po' più mosso*).

3. The third section lasts roughly four and a half minutes (until 13′ 30″, measures 202–296) and in the atmosphere evokes the first section. Here the choir comes back with six more verses.

4. The last minute or so (measures 297—315) introduces a sudden change in mood and texture, revealing itself as 'the light' of the piece – marked by the verses '*Nella gioia / vivendo / ti cercherò*' ('In the joy / throughout life / I will search for you').

5.4 Musical processes and layers

Nessun lamento is one of the most diverse pieces in my portfolio, and several layers and processes accumulate and create its final sound. These interact strongly with each other, but rarely merge, and so the soundscape is constantly kept rich and subject to different poles of attraction. This is facilitated by the high permeability[4] of each layer, which often unfolds as a family of instruments that moves at a distinct pace and insists on different textures and motifs, almost as if its personality wants to remain intact. Each process also maintains a high degree of freedom within its own domain, and this allows chiaroscuri and sharp contrasts throughout the piece. Finally, as the approach is 'choral', in its broadest sense, the final result is an organic complex entity.

Choir One of *Nessun lamento*'s maximally exposed layers is the vocal layer. The choir goes where the poem goes, its character is solemn and expressive, and its pace is dominated by relatively longer note values compared to the rest of the orchestra – although this grain can change according to the text.[5] Sometimes different voices,

[4] See 'Impermeability of the musical material' on page 32.
[5] See, for instance, the first appearance of the scherzo subject, Figure 5.3.

independently, give a different interpretation of the poem, but most often this is 'painted' chorally.

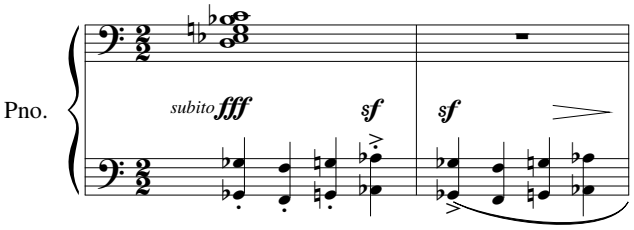

Figure 5.1: ***sf*** *staccato* (mm. 60–61)

The choir is a protagonist actor. Its textures are usually highly permeable and often allow themselves to be pierced by sharp *staccato* notes played by the brass or the piano. Word painting is constantly present (I think of this piece as a madrigal), although with relatively low backlash and volatility and a steady forward direction.

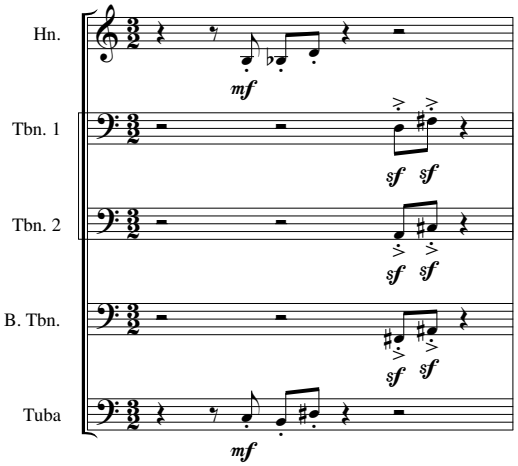

Figure 5.2: ***sf*** *staccato* (m. 68)

Between measures 87 and 89 the second tenors introduce a fragment that later will become the subject of an instrumental scherzo (mm. 123–201, *Un po' più mosso*). In this early moment, the importance of the fragment is not particularly emphasised, and so it flows away in the choir's incessant walking.

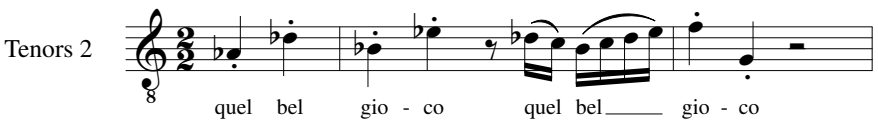

Figure 5.3: First appearance of the scherzo subject (mm. 87–89)

Brass instruments The brass family is the choir's internal voice and its unconscious mind. It alternates between completing the choir and penetrating its permeable texture with sharp *staccato* interventions or figures that are derived from these, such as static notes with a dynamic hairpin ranging from *dal nulla* (notated as ***pppp***) to ***sf***, with the last bit articulated as a *staccato* conclusion (sometimes supported by the flutes).

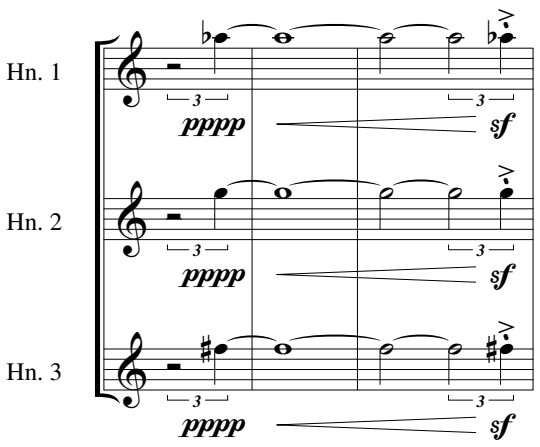

Figure 5.4: 'Crescendo hairpin' (mm. 45–47)

The brass section becomes the absolute protagonist during the instrumental scherzo, in which the second tenors' melodic line of mm. 87–89 develops into the subject of a fugato episode. There, the brass instruments often lead the musical discourse, and sometimes they both lead and accompany it. For example, between mm. 163 and 168, some of the brass instruments are involved in the scherzo motifs, whereas others are involved in the aforementioned crescendo hairpins on static notes. This results in something resembling an 'electromagnetic disturbance', which marks an increase in the distance between the poem's point of view and what is being played.

The pulsation Often, an incessant pulsation, provided by the pizzicato of violoncellos and contrabasses (and sometimes by the pianoforte too), accompanies the piece.[6] This pulsation is sometimes regular, but more often it is intertwined with irregular beats, which provide a constant energy to the musical material.[7] There is some influence from the ostinato bass lines of baroque laments in the way that the violoncellos and

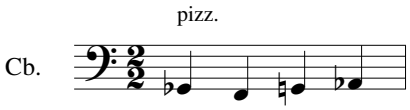

Figure 5.5: 'Bass figure' (recurring)

[6] Cellos and contrabasses use the bow as well, almost as much as they play pizzicato. See mm. 1–8, 14 (cb.), 19–26 (split), 29 (cb.), 33, 52–54 (vc.), 66–70, 80–86, 104–109 (vc.), 116–119, 143–146, 154–155 (vc.), 162–168, 175–178, 189–194, 204–222, 258–263, 292–296 (vc.), 302–314.

[7] Cf. 'Energy of the musical material' on page 33.

contrabasses behave, although their free wandering leans towards novel lands. I rarely give 'programmatic' meanings to musical processes; nevertheless, in my mind this layer crystallised as the representation of incessant walking (which also involves the piano when this provides a similar pulsation), not necessarily achieved by the voice of the poem, but by the universe in general, which never stops evolving.

Flutes and light The flutes sometimes resemble an involved spectator, at other times they are the chorus of a Greek tragedy. Very often they represent the warm light of the piece. They comment from a distance, never protagonist, and yet always there, to the extent that *Nessun lamento* would not exist without flutes.

In this 'halved' orchestra, together with the trumpets, they are the only family of instruments capable of producing high pitches.[8] Their way of reaching these however is distinct, and so they tend to be alone in what they do.

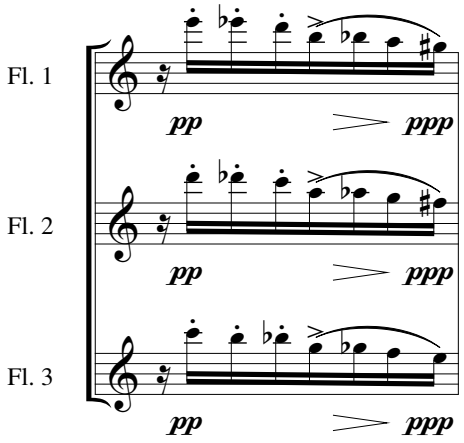

Figure 5.6: 'Flutes' ostinato' (recurring)

Often the flutes play their own sound figures that no one else plays, and this culminates during the scherzo in an ostinato motif. The latter is a descending fragment of seven notes, three of which are articulated as *staccato* and four as *legato*, with a decrescendo hairpin that marks the second part (the same motif is played once by horns and trombones as well – m. 171).

[8] The pianoforte can also reach high pitches in theory, but it does so very rarely and only for very brief moments.

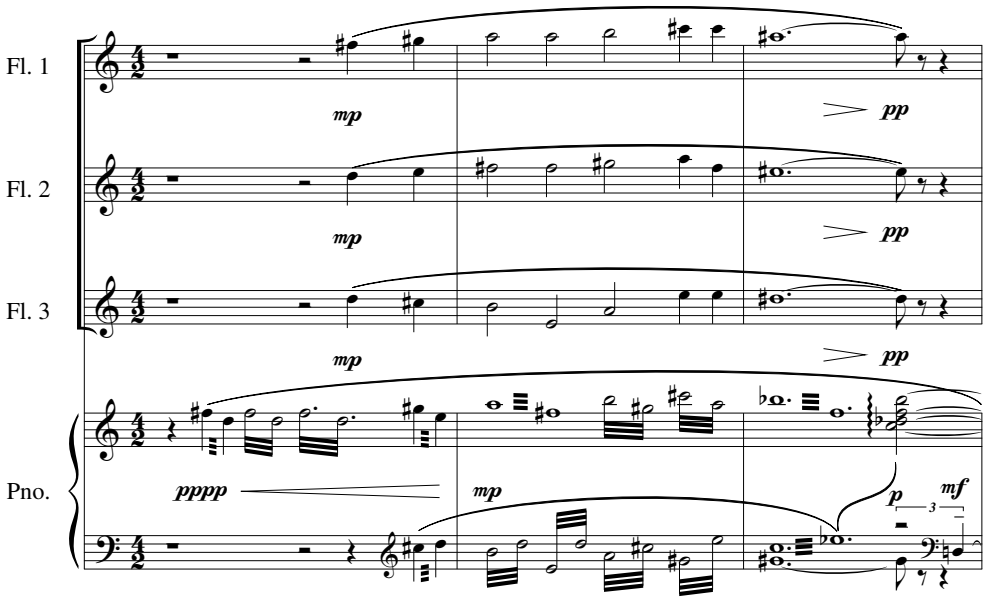

Figure 5.7: 'Flutes and light', (mm. 104–106)

Pianoforte The piano and its textures are another protagonist actor. They are both the poem's travel companions and the glue between choir, brass, strings and flutes. The piano's textures are often related to what cellos, contrabasses, trombones and tuba play, although there are many instances in which the instrument ventures into its own territory.[9]

From an orchestration point of view, some salient sound figures often provided by the piano are made up of extremely low pitches in the form of slowly repeated clusters. These already appear at the very beginning, and they never stop recurring throughout the piece.

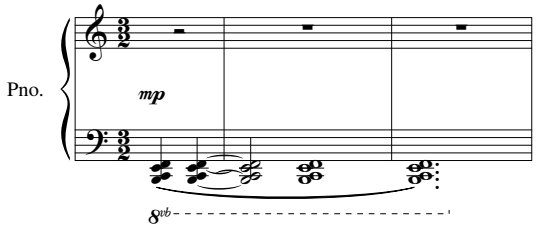

Figure 5.8: 'Very low clusters' (mm. 8–10)

Percussion The percussion section often relates to tuba and contrabasses, but its immense power is truly heard during the many hairpins and contrasts between

[9] See, for example, measures 21–22, 33–34, 46–50, 52–59, 104–106, 116–119, 131–142, 157–160, 226–238, 263–270, 277–281 and 289–290.

extreme opposite dynamics. Sometimes the percussion is the ordering force in front of irregular time signatures or irregular rhythmical figures (e.g., timp. mm. 184–185), while at other times its role is to provide a rhythmical counterpoint or its own irregularities.

Immediately before the instrumental scherzo, the percussion section stands up and plays a short dialogue between suspended cymbal and snare drum that works as a short intermezzo.

Finally, in the last minute, the percussion section is a leading part in the sound explosion that characterises the conclusion of the piece. Here, timpani, snare drum and bass drum (the latter with a reduced amount of beats) play an always-changing flow of homorhythmic beats in ***f*** (shortly after a similar 'warning' in ***ff***).

Chiaroscuri In its solemnity, the choir never holds back in expressivity, and neither does the rest of the orchestra. And so, among the most exposed musical gestures, are *crescendo/decrescendo* hairpins that span extreme opposite dynamics.

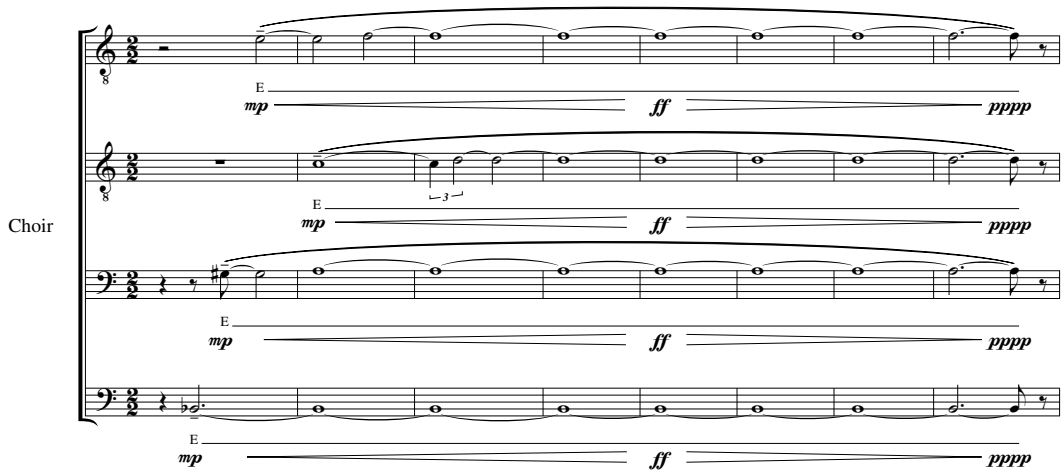

Figure 5.9: 'Chiaroscuro' (mm. 71–78)

Although the difference in acoustic saturation can be maximal, the change usually happens slowly. Moments in which the dynamic hairpins unfold at a faster pace, however, are not entirely missing.

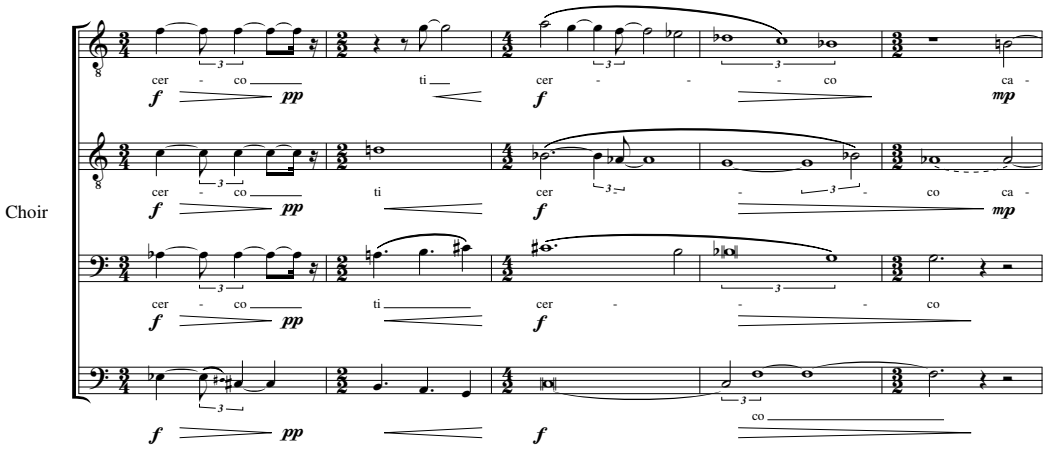

Figure 5.10: 'Multiple *chiaroscuri*' (mm. 266–271)

The presence of contrasts between extreme opposites (which, as we have seen, are also present in the text) is an important part of the piece's character. The loudest dynamics are never screamed, but are instead powerful and intense.

Other recurring elements I mentioned earlier Petrassi's *Coro di morti* as one of the few examples in literature whose instrumentation comes close to *Nessun lamento*. Petrassi's piece always impressed me deeply, because of both his text choice (a masterpiece by Leopardi in which the poet imagines that a group of dead bodies wakes up and discusses how strange life appears to be from their point of view) and its visionary atmosphere.

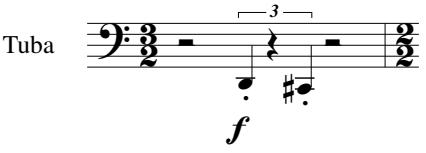

Figure 5.11: 'Descent' (m. 109)

Apart from the instrumentation, there are two further elements of closeness between the two pieces. One is the pulsation, also present in Petrassi[10] – though it is carried by the piano instead of pizzicato strings – and another is an explicit homage of mine to Petrassi, represented by a single descending interval, recognisable and ubiquitous throughout *Nessun lamento* (the actual interval changes often, but not its descending contour).

[10] It may be that the pulsation in Petrassi's piece indirectly derives, amplified, from the pulsation sometimes present in Stravinsky's *Symphony of Psalms*.

Another recurring element – unrelated to Petrassi's piece – is derived from the sound figure played by the flutes at the very beginning of the piece (mm. 6 and 8), and it consists of three semiquavers followed by an accented note whose duration can vary (*elementum indifferens*). Usually, with the exception of the very beginning (and a few other cases), the first pitch of this figure is a semitone away from the other three notes, which are in unison. Normally, when played by more than one instrument of the same family, the element is harmonically organised as a major or minor triad in close voicing (although not always), independent from the 'harmony' of the rest of the orchestra.

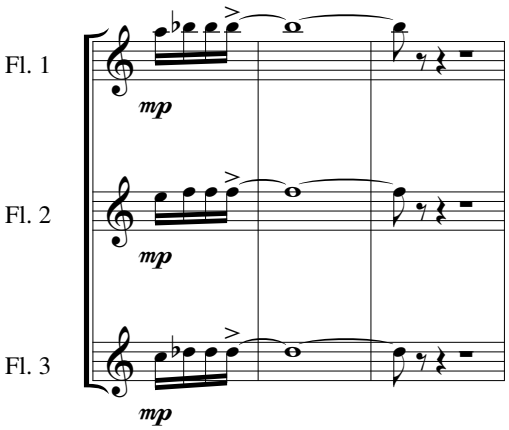

Figure 5.12: 'Recurrences' (mm. 109–111)

Musically, this figure belongs to that class of fast figures able to penetrate the choir's texture; but as the piece evolves, it acquires its own autonomy. Often it is played by the flutes, though sometimes other instruments can play it too.

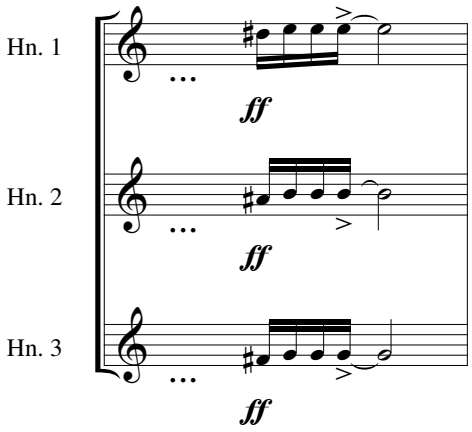

Figure 5.13: 'Recurrences' (m. 113)

Chapter 6

Rapsodia sognante, for three guitars

> Hold fast to dreams
> For if dreams die
> Life is a broken-winged bird
> That cannot fly.
>
> Hold fast to dreams
> For when dreams go
> Life is a barren field
> Frozen with snow.
>
> — Langston Hughes, *Dreams*.

Rapsodia sognante is an eight-minute piece for three guitars. The Italian title literally means 'dreamy rhapsody', and alludes to the nocturne-like atmosphere and the free form of the musical flow.

The 'inclusivity' of *Rapsodia sognante* is more subtle than in the rest of my portfolio. I have always wondered how players who have been trained for years to play an instrument (and discover all the advanced idioms that this can express) only through classical music can start playing something so different as contemporary music, which often asks for the unfamiliar. Is what we ask for demeaning? Is it 'less clever' than what they already know? Is it boring? Do we actually make the effort to discover how much they have already learned with their own instrument?

The piece seeks to discover what can be acquired from traditional (advanced) idiomatic writing for guitar and from listening to the players, with the idea that sound comes from them and their experience, not only from the objects that they

play. In a world that often seems to over-idealise timbre[1] and how instruments can sound, *Rapsodia sognante* seeks to understand how much of this is indissolubly embodied in a person's experience, beyond a simple object.

6.1 The form

The open flow of the musical material can be divided in three macro-sections, clearly distinct in both density of textures and direction.

- Minutes 0′–1′ (mm. 1–24): Calm and disperse introduction
- Minutes 2′–5′ (mm. 25–159): Rhapsody
- Minutes 6′–8′ (mm. 160–230): Conclusion

Although the initial elements make a short reappearance in the conclusion and the whole piece constantly evokes previous material, there are no distinct thematic areas.

6.2 Discussion

In composing for guitars I have been influenced to some extent by three pieces by Petrassi – *Suoni notturni* (1961), *Seconda serenata – Trio* (1962) and *Nunc* (1971) – and Berio's *Sequenza XI per chitarra sola* (1988). I also have a basic first-hand knowledge of the instrument, which brought some familiarity to the writing. Along with the open form, the numerous swift passages that often emerge as sonic islands

[1] Rather than 'timbre', the German word *'Klang'* is often used in literature to refer to the open dimension of *sonority* that contemporary music is sometimes fascinated with. It is worth noting that the concept never truly convinced Adorno; cf Adorno, 1992 [1961], note 4 on p. 277: 'The false emphasis on the idea of sonority [*Klang*] in the new music is the sign of the dilettante and of those people who place arbitrary interpretations on what they have failed to understand. The dimension of sonority is perhaps the most prominent element in the new music, having been liberated by it and, though newly discovered, it is less in conflict with older listening habits than anything else. However, in works which count it is never an end in itself, but instead is both functional in the context of the work and also provides an element of fermentation. Schoenberg always stressed that sonority [*Klang*] was a means to achieve the adequate representation of the musical idea. If the new music is at all incompatible with what preceded it, it is in the absence of sonic attractiveness [*Klangreiz*] as a categorical concept. This is still the most popular way into mis-hearing it. This has been confirmed by the most recent development, in which sonority has been integrated into the overall construction as one of its parameters.'

are what give a rhapsodic (improvisation-like) character to the piece, and they rise and die from within the sea of the musical discourse.

Together with the gestural discourse, a melodic and a harmonic discourse also unfold, which are largely responsible for the directionality of the music. The timbral homogeneity of a three-guitar ensemble, which offers a glimpse of a single powerful instrument, is a relatively rare presence in literature. The idiomatic writing in part constricts the contours of the musical material to the nature of the instrument and its player, and my aim of getting even closer to these amplifies such autarchy. Yet, the three instruments are not afraid to explore different landscapes, and from the middle of the central section until the final section the guitar sound approaches that of three mandolins (mm. 65–88 and 107–159); but, more importantly, the discourse in these sections also changes form, from motif-based to event-based.[2]

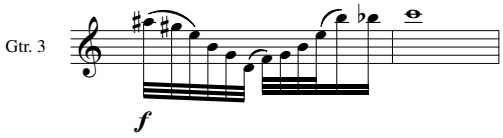

Figure 6.1: 'Rhapsodic group' (mm. 35–36)

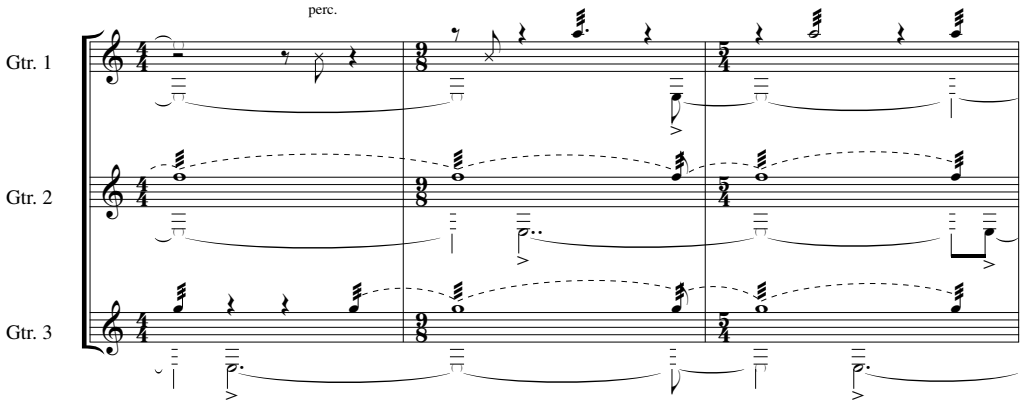

Figure 6.2: 'Three mandolins' (mm. 68–70)

Rapsodia sognante has the unique role within my portfolio of exploring the performer's role as a 'receiver' rather than a 'sender', and so the stratification of layers, too, is at times inflected from that perspective, to the extent of stretching towards a stratification of performing traditions.

[2] We have seen something similar in *Pale Blue Dot*: see "'Alive' and timeless processes' on page 59.

Chapter 7

Wavy repercussions, for ensemble

> Like as the waves make towards the pebbl'd shore,
> So do our minutes hasten to their end;
> Each changing place with that which goes before,
> In sequent toil all forwards do contend.
>
> — William Shakespeare, Sonnet 60

Wavy repercussions is a piece for flute, oboe, clarinet, bassoon, horn, trombone, percussion and piano that lasts about ten minutes. The music explores the rhythmical dimension and the energy that this can carry, and it does so with lightness and wit.

The plan to write this piece came soon after I finished *Nessun lamento*, which – although under a different light – already had the seeds of what *Wavy repercussions* seeks to explore. In fact, that piece was charged with a constant rhythmical energy for which a ubiquitous 'walking bass' was largely responsible.[1] *Nessun lamento* was also characterised by a remarkable severity, and one of the first things I realised after finishing it was that this energy could be explored further, but this time lightly and airily.

As for the title, the idea of 'wavy' trivially came after staring at sea waves: sea waves look regular, but no single wave is like any other. And so are the time signatures of *Wavy repercussions*, which are some of the most unstable time signatures I have ever used, continuously shifting between longer and shorter values and never finding rest. And yet, 'seen' from far away, the piece *tends* to sound in ternary rhythm ($\frac{3}{4}$), which I believe is roughly the mean value of the

[1] See 'Energy of the musical material' on page 33 and 'The pulsation' on page 78.

Gaussian distribution around which the always-changing metre orbits. The word 'repercussions' alludes to the massive presence of repeated notes. Put together, the title echoes the English expression 'heavy repercussions'.

Wavy repercussions represents a very different soundscape when compared to the rest of my portfolio, and in its open identity it embodies the entire idea of 'not focussing' that characterises my compositional approach.

7.1 Genesis

Shortly after finishing *Nessun lamento*, I happened to discover Hanna Kulenty's *Going Up 2* (1995). I have never been fond of minimalism, but I felt that Kulenty's piece was suggesting something connected to 'energy' that I needed to explore. This was the trigger for a soundscape that had slowly been building up inside me during the previous months.

Due to the way I wanted the musical flow and its internal hierarchy to develop, I composed this piece in a peculiar fashion, leaving the piano and the percussion to be composed last (though I knew from the beginning that a constant pulsation would be present in the piano). That approach remained until the very end.

7.2 Discussion

A constant swift pulsation provided by the piano charges the material with musical energy from the first measure until the last. This sea of energy is constantly refilled by an ever-changing time signature, which breaks patterns and introduces new rhythmical expectations – and yet it seems to resemble a regular ternary shape if seen from far away.

One of the things I usually appreciate the least about minimal music is its tendency towards trivial 'harmonies' and 'counterpoints'; and so I have tried to keep my own usual mindset while exploring a world that was not my own, at least while dealing with its most distant aspects. Counterpoint is at times dense in the piece, and harmony tries not to be trivial, although, despite a few exceptions, it is never a protagonist dimension.

What instruments play the most often are ultimately repeated notes – *lots of them* – and often the longest melodies they manage to build do not last longer than single melodic intervals.

Several 'sound panels' follow each other and combine throughout the piece, sometimes appearing abruptly, other times more gently, most of the times smoothly and linked together by unisons that are passed between instruments.

A characteristic feature of *Wavy repercussions* is that it possesses formulaic elements more or less permanently tied to specific instruments. These briefly emerge like bubbles in the sea, only to disappear soon afterwards.

The piece's main stratification consists of 'primitive' layers such as rhythm, counterpoint, formulae, etc., without 'higher levels'. When we consider my production in its entirety,[2] the very idea of exploring the sound world of *Wavy repercussions* is itself, in many ways, an act of inclusion.

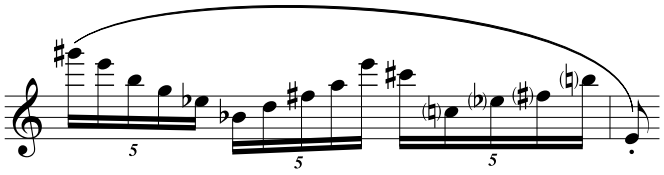

Figure 7.1: 'Formula' (mm. 383–384)

[2] See 'Stylemes and tribal appeal of the musical material' on page 41.

Chapter 8

Obsession, for solo violin

> Lovers and madmen have such seething brains,
> Such shaping fantasies, that apprehend
> More than cool reason ever comprehends.
>
> — W. Shakespeare, *A Midsummer Night's Dream*, act 5, scene 1

Obsession, for solo violin, is one of the two compositions for solo instruments in my portfolio. The music lasts between eight and nine minutes, and the title alludes to the presence of a recurring musical element that at times sounds alien to the musical discourse, though this does not prevent it from returning again and again, just as obsessions constantly return unless something on the horizon temporarily distracts the obsessed, or an internal irrational push appears (i.e. another obsession).

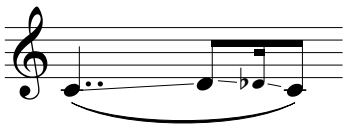

Figure 8.1: 'Obsession'

The piece is calm and contemplative, with only occasional fast passages. The sound is explored and enjoyed in all its aspects. From time to time, the musical material lands in territories that might appear very distant from the point of departure, were there not a recurring obsession to connect them together. For instance, at around $2' 20''$, for about thirty seconds, a rhythm reminiscent of Cuban *tresillo* suddenly appears – only it is irregular and not always played with definite pitches. Furthermore, at around $4' 30''$ until $5' 40''$, a *cantabile* fragment emerges and gives its long push to the music. This openness and permeability is where the

stratification of *Obsession* builds up – although a solo piece has limited possibilities in terms of inclusivity.

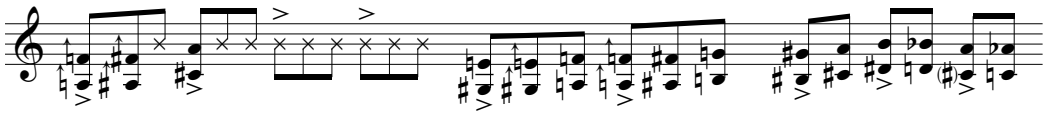

Figure 8.2: 'almost *tresillo*'

An experimental and pragmatic approach is somehow always hardwired into the musical flow, and sound figures are sometimes explored, then abandoned, then explored again, and so on. The very idea of writing this piece came from listening to a talented violin player who was freely experimenting and improvising on their violin, unaware that someone was listening.

Chapter 9

La réponse est dans la pelote de laine, for solo clarinet

> And so you will not think it wrong
> When she can play the whole night long,
> With no one to disturb her play,
> That Pussy goes to bed by day.
>
> — Oliver Herford, *Kitten's Night Thought*

La réponse est dans la pelote de laine, together with *Obsession*, is the other composition for solo instrument in my portfolio (solo clarinet). The music lasts between six and seven minutes. The title – which in French means 'the answer is in the ball of wool' – captures the image of a cat that finds in a yarn something to play with. Once again, the image does not stand as a 'programme', but as an analogy.

The piece is another exploration of the concept of musical energy. But this time – unlike *Wavy repercussions* and (partially) *Nessun lamento*, which explored the concept of 'positive energy' – this piece tries to explore the concepts of 'negative energy' and 'volatility'.[1]

A cat that plays with an object pushes it back and forth, rolls it, tries to animate it, and can spend a considerable amount of time convincing itself that it is not in front of an object but it is hunting its prey, despite the fact that every movement ultimately comes from the cat, and the toy is animated only from the outside.

[1] See 'Energy of the musical material' – in particular note 60 on page 38 and note 63 on page 39.

Still, at times, the cat can throw the ball of wool onto an edge (or any other unstable place), and for a moment the ball will virtually become animated. A sudden movement of the ball might even scare the cat and make it run away; and so, the energy that the cat puts into the object, while dissipating, does not animate only the toy, but can indirectly move the environment, and the cat with it too.

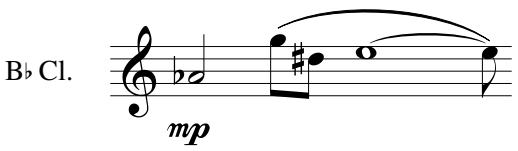

Figure 9.1: 'The cat's posture'

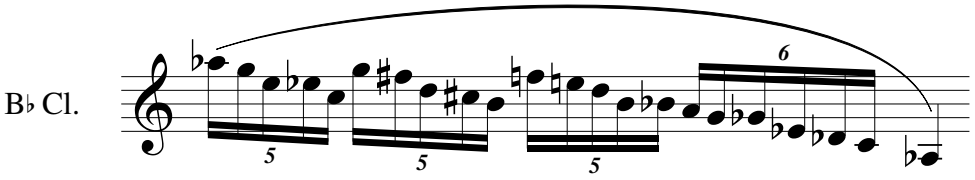

Figure 9.2: 'The ball of wool rolls down'

I owe some influences for this composition to Luciano Berio. Among his repertoire of *Sequenze*, Berio wrote one for clarinet (1980) and one for trumpet (1984); idiomatic writing might initially suggest looking at his *Sequenza* for clarinet, but as a matter of fact it is in the *Sequenza* for trumpet that some affinities can be found. In my opinion, Berio's *Sequenza* for trumpet touches the same idea of 'negative energy' that I have attempted to address, and his protagonist instrument almost tries to animate its surroundings – even literally in the case of the resonating piano. It is true though that any idiomatic writing for clarinet will look and sound very different compared to any idiomatic writing for trumpet, and so this affinity is only in the spirit – and, even in that, it becomes apparent only when seen from a distance.

9.1 Discussion

Once again my unconscious mind was a step ahead of my conscious mind, and when I started writing the piece – and even immediately after finishing it – I did not completely understand what I was staring at. The spontaneous image of a cat was the first hint that my unconscious was trying to give me some clues (and the fact that I am not particularly fond of cats made it all the more believable).

In reality, the cat is just a metaphor for an energetic creature that transfers time and momentum into an inanimate material; and the piece is ultimately not about *the cat* but about *its object* (the musical material) – or perhaps, with a little imagination, it is about both.

Chapter 10

Ta da da, e poco più, for string quartet

'Twas brillig, and the slithy toves
Did gyre and gimble in the wade;
All mimsy were the borogoves,
And the mome raths outgrabe.

— Lewis Carroll, *Jabberwocky*

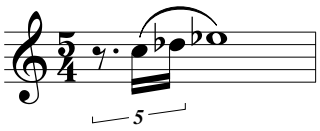

Figure 10.1: '*Ta da da...*'

Some of the pieces of my portfolio are born with a broad scope and are already multi-dimensional in their poietic dimension, but in *Ta da da, e poco più* quite the opposite happens. Here, an accumulation of layers and processes emerges despite the piece explicitly trying to narrow down its scope as much as possible, by reducing its *productive* elements, as the title suggests, to no more than two.[1]

In fact, *Ta da da, e poco più* in Italian means '*Ta da da*, and a little more', and the title refers to the fact that the entire piece orbits around a single motivic element made of three rapid notes ('*ta da da...*'), which are *almost* ('...and a little more') the only mobilising element present in the entire score (the other element, hinted by '*e poco più*', is shown in Figure 10.2).

[1] About the term 'productive', see p. 15.

Such a polarised scenario is possibly the one that carries the strongest 'nucleation factor' in my entire portfolio. This does not only emerge from extra-musical factors (e.g., the evocative title), but from the clarity and the fabric of the musical material itself.[2]

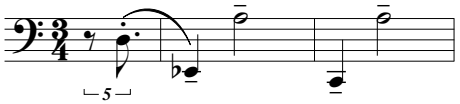

Figure 10.2: '. . . e poco più'

10.1 Insights

The piece lasts about nine minutes. The macro-form appears as having two thematic poles, one built around fast repetitions of the *'ta da da'* motif (beginning), and the other built around the same element stretched as the slow antecedent of long melodic phrases (mm. 90 et seqq.). Both poles have clear contours, almost as in the sonata tradition. The only other motivic element (seldom active) in the piece is presented by the cello as early as the fourth measure, and as anticipated it is the only relevant force that diverges from the ubiquitous *'ta da da'*. This element never creates its own thematic area, and its function is limited to that of a contrasting figure.

10.2 Discussion

An interesting result of this experiment is that although the poietic dimension remains dominated almost only by one single process, the stratification of the musical material is still able to reach great depths (thus the score ends up showing rather more than just a *'ta da da'*).

For starters, the piece attempts to shape its own functional harmonic system based on original ideas about 'dissonance' and 'consonance' (tension and release) which include motion, chord spread and melodic direction as parameters.[3] The musical discourse is almost always motif-based, and even the moments that come close to an event-based approach rely heavily on the motivic dimension (e.g., mm. 1–15, 80–88, 205–240). The second thematic area (mm. 90–120) is traditional in

[2] See 'Condensation force and nucleation factors' on page 39.
[3] See 'Energy of the musical material' on page 33.

its material, presenting stepwise melodic lines that remind us of Lutheran chorales from afar. Rhythm plays an important role, especially in the sections that are most closely related to the first thematic area. Simplicity was the keyword of the composition process, and so, besides a couple of quarter tones, the musical material does not rely too often on advanced techniques.

In one of the few moments of the piece that are process-based, just before the end, the four instruments liquidate the initial motif by spiralling down towards more and more packed rhythms. By spiralling down I mean *literally* spiralling down: the diminution rate has been inspired by orbital decay, with the final encounter alluding to the merging of two black holes – this similitude however does not go beyond rhythm, and the quasi-pedal notes of the passage seem to lean more towards a broken vinyl record that repeats itself, or a congested queue.

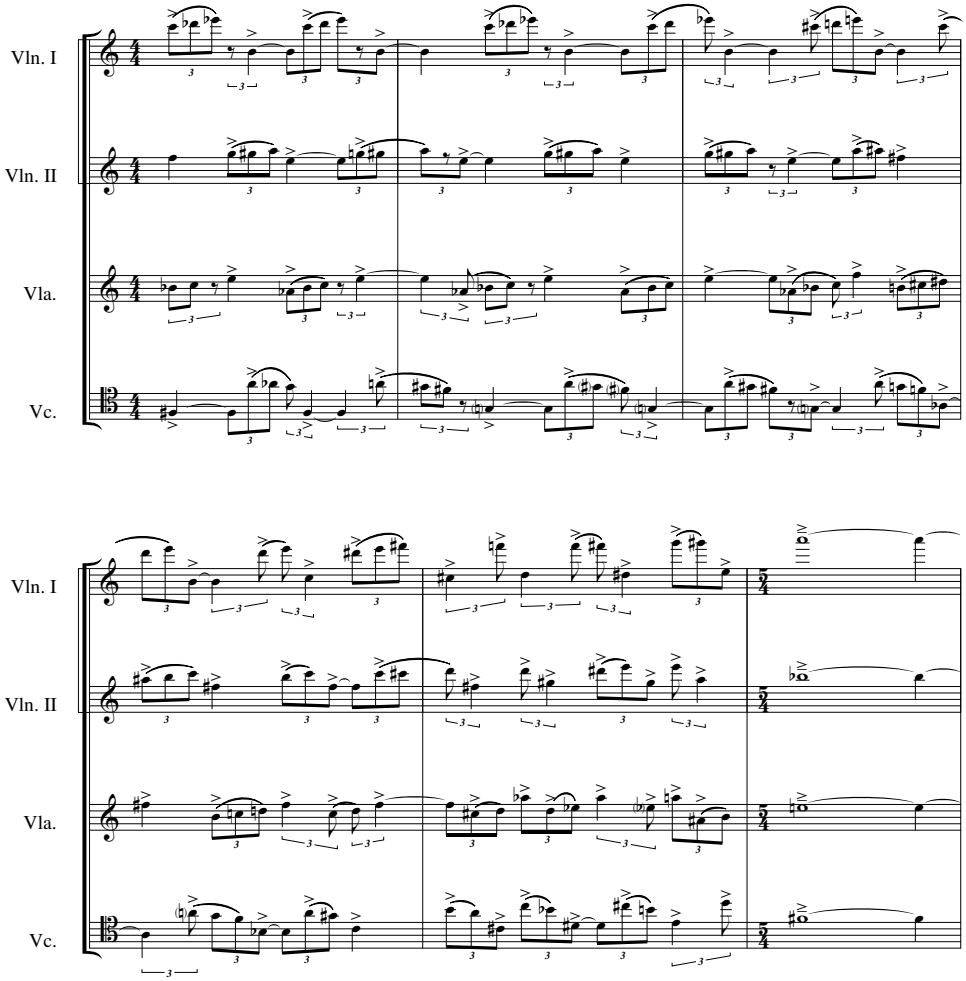

Figure 10.3: 'Spiralling down' (mm. 235–240)

Chapter 11

Conclusions

The path traced by this commentary is a fluid one, connecting the distant dots of the challenges that musical composition presents when we aim for a rich and layered universe. The presence of my portfolio is a reminder that this path is also deeply shaped by my own particular experience as a composer. And if on the one hand this is an unavoidable source of partiality, on the other hand it promotes an empiric approach and practical goals. The second chapter is an attempt to systematise and generalise what I have found along the way, but even that chapter, eventually, remains the open diary of a journey that still has much left to explore.

At this point we can attempt to answer using only a few words what 'composing without requests' means; and say that ultimately it means finding the solutions to a dialectical scenario in which:

1. Music listening is a creative act, where everyone, independently, searches for elements of interest;

2. Music listening is strongly related to the past experience of every single listener, who will search for elements of interest with the instruments they hold;

3. Music listening can be influenced by the culture of the society listeners live in.

Assessing how much each piece of my portfolio constituted a successful step towards composing without request is not something that can easily be measured. However, it is possible to estimate how much each piece preserved and nurtured the universe presented in the second chapter. The value of this portfolio then becomes that of outlining a method while documenting how the solutions to the challenges that arise

from embracing a layered approach to musical composition can be found. With this in mind, we can attempt a short review of how well this universe has survived by looking at each piece:

- *Pale Blue Dot*: two compositional approaches penetrating each other (stylistic gradient, permeability), temporal spatialisation
- *Fragments of a lover's discourse*: inclusivity, stylistic gradient, condensation force and nucleation factors
- *Nessun lamento*: great depth and high permeability of the musical material, positive energy
- *Rapsodia sognante*: performers' aesthetic dimension
- *Wavy repercussions*: positive energy
- *Obsession*: stylistic gradient
- *La réponse est dans la pelote de laine*: negative energy
- *Ta da da, e poco più*: condensation force and nucleation factors, great depth of the musical material in spite of a narrow poietic idea

'How to compose without requests?' is a relatively simple question. And yet, ever since I started my quest, I have had the impression that the further I investigated, the more intriguing questions the topic would present in return. I therefore feel that this is still the beginning of a journey towards unexplored destinations. At the same time, however, I believe that the systematisation that I have been able to report so far has truly been worth the effort.

Towards the end of this journey, the 'spinoff' concept of musical energy captured my focus more than other concepts, and I became persuaded that it is an area with a high potential for future development. Finally, if focussing on absolute music was vital in the first stage to frame the essence of the problem of composing without requests, an interesting 'natural evolution' of the same journey will be to explore exactly the same question in a context that is inherently more 'layered': that of music theatre.

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