

Portfolio of Original Compositions with
Written Commentary

Daniel Richard Wilson

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The candidate confirms that the work submitted is his/her own and that appropriate credit has been given where reference has been made to the work of others.

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Abstract

Noise is ubiquitous, from the sound of cars in the street to the scrape of a cello bow on a string. Often noise is considered to be unwanted, an intrusion on an otherwise quiet life. Through a consideration of the thinking of Alain Badiou, and of the broad range of literature that deals with noise specifically, I dispute noise's unwantedness, re-situating it as an integral, and therefore essential, part of being. The written portion of this project exists alongside a portfolio of compositions comprising solo and small chamber works together with a larger immersive-performance piece. The practice exists not as a complementary, but rather as an integral part of the research which posits that, as outlined by Badiou, truth is only attainable through the combination of philosophy and truth procedures.

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1 Introduction

1.1 Why noise?

This is a project about noise. In essence, the research question that is asked is ‘what is noise?’ However, this question is far more complicated than it first appears. This is because I am questioning—as will become clear in the following literature review—whether noise can be understood as a construct of human knowledge, or whether it is something that is ontologically ‘true’, and therefore exists outside of human influence. The research questions and hypotheses can be summarised thus:

Questions

- What is noise?
- How is noise?¹

Hypotheses

- Noise is not just a sound.
- Noise is not just unwanted.

This is also a project about music, and is such an investigation of the relationship created between practice and more ‘traditional’ research. In some ways, music is understood as the antithesis of noise: music is humanly organised sound; noise is, according to the same understanding, somewhat more disorganised. It is my intention to write music that deals with noise that is in and of itself noisy, rather than what many people would consider to be ‘Noise Music’.² It is also my intention to use the music written as a research tool to re-engage with noise on a theoretical level.

1.2 Practice as research: a methodology

The study of noise often draws upon philosophical theory and a detailed preliminary exploration of the literature of noise is an essential step in laying the groundwork for the pieces that follow. The practical element of the project is, however, vital to the research process. The literature review is the first part of a four-step cyclical

¹ The relevance of the ‘how’ as opposed to the ‘what’ will become apparent as the chapter progresses.

² See p. 2.

process that I have adopted as my methodology, which can be understood as follows:

1. Theories are explored which lead to plans for musical pieces;
2. Pieces are then written in light of this research;
3. These are then reflected upon in the form of a critical commentary;
4. The pieces and commentaries form the basis for further research.

This is one cycle of a process that could continue *ad infinitum* and this approach to research might at first be considered problematic in terms of the project's scale. In terms of this project, I have preliminarily restricted myself to:

- Looking at the three models outlined in the literature review, and writing pieces that deal with these models;
- Constructing my own 'supermodel' of noise that encompasses all of these models and satisfies my own initial questions, specifically the question 'how is noise?'
- Using this new supermodel I begin to reflect upon the way in which noise can be understood to exist in relation to being, moving towards answering the question 'what is noise?'

This final project is then subject to further reflection that answers the research questions from the second half of the project—which is to say, 'what is noise in relation to being?'—before concluding and highlighting any areas for further research that have been uncovered during the course of the project. Using this model, work submitted is in the form of a portfolio of smaller pieces, and a longer installation work.

1.3 noise vs. Noise I: a note on Noise Music

Whilst this project is concerned with noise in music, it is important to make a distinction between (1) noise *qua* noise,³ (2) a noise, and (3) Noise (concerned with the categorisation of certain types of music). It is Noise Music as genre that concerns much of the writing in the literature review that follows. It is also the focus of

³ *qua* (Latin) tr. 'in the capacity of'. This is a key word used by Alain Badiou in his discussion of ontology (see pp. 8-17).

the work of Paul Hegarty including the book *Noise/Music: A History* (2007), which is often used as a reference point for other authors. Two recent volumes on noise, namely *Reverberations: The Philosophy, Aesthetics and Politics of Noise* (2012) and *Resonances: Noise and Contemporary Music* (2013) are the product of a conference at which Hegarty served as a keynote (he also co-edited the 2012 volume). Many of the chapters contained within the two volumes engage with different practices within Noise Music, or with its various influences: psychedelic rock, punk, metal, the post-1945 European and American avant-garde, and electronic dance music. Most discussions of noise since *Noise/Music's* publication have made extensive use of Hegarty's work with authors acknowledging him as having either a personal hand in the editing of their work, or otherwise acting as an influential character in some way.

The fetishisation of Noise Music as genre can often lead to noise and Noise becoming synonymous. However, much of what is discussed in terms of Noise is often related to a discussion of noise as overcoming/affect.⁴ This is only one of the three models of noise that I have identified in the literature review that follows,⁵ and, as a result, only represents part of what might—and, as I argue below, ought to—be understood as noise. Though much writing of Noise Music is concerned with the practice of using sound as a form of overcoming, this is in itself a form of pigeonholing. The vast majority of writing on Noise Music is concerned with the practices of harsh noise, specifically the work of several noise artists from Japan: Merzbow, Masonna, and Keiji Haino among others. There is little room in my project for an extended discussion of this movement, and little that I can say to add to it.⁶ Nevertheless, there are examples of Noise Music that do move outside of the harsh noise environment. Artists such as Filthy Turd explore the role of noise in mediality,⁷ specifically the subversion of audience expectation in relation to previously known material.⁸

⁴ The concept of noise as overcoming/affect will be unpacked later in this chapter.

⁵ It should be made clear that the three models of noise being referenced here are not related to the distinction between noise *qua* noise, a noise, and Noise, but are rather models of noise in communication.

⁶ This literature includes various articles by Hegarty such as 'Noise threshold: Merzbow and the end of natural sound' (2001) and 'Just what is it that makes today's noise so different, so appealing?' (2008) as well as longer works like David Novak's *Japanoise: Music at the Edge of Circulation* (2013), and my own article '[Bound]aries: Investigating 'Unacceptable' Imagery in the Album Art of John Zorn and Merzbow's "Music For Bondage Performance"' (2011).

⁷ Noise as mediality will be discussed at length later in this chapter.

⁸ James Mooney and Daniel Wilson in *Resonances: Noise and Contemporary Music* (London: Bloomsbury, 2013), 315-25. If I were to make any explicit observation with regards to Noise Music here, it would be to suggest that many different styles of music could be brought together under the banner of noise. Indeed, I would argue that all music could be understood as noise to some extent, though here I am talking about noise in relation to the three noise models in what follows.

1.4 Noise as language

The word noise is bound up in a complex etymology. The English word noise is most visually similar to the French *noiseuse*. However, rather than being translated as sound, *noiseuse* translates as ‘troublemaker’, and it is in these terms that Michel Serres discusses the word:

I think I know who the *belle noiseuse* is, the querulous beauty, the noisemaker. This word noise crosses the seas. Across the Channel or the Saint Laurence seaway, behold how the noise divides itself. In Old French it used to mean: noise, uproar and wrangling; English borrowed the sound from us; we keep only the fury. (Serres, 1995 [1982], 12)

Serres describes the *belle noiseuse* as both the beautiful troublemaker and the sea. It is in the fury of the waves that Serres hints at noise’s second meaning: fury and uproar. This sense of fury is encapsulated in the more modern French word *bruit* from which the basic understanding of noise in English is drawn: *le bruit* is translated as ‘noise’, and *sans bruit* as ‘without a sound’. In addition to this understanding of the term, however, *bruit* can also take on another meaning: that of rumour. The term *faire du bruit* translates as ‘to cause a stir’ and *le bruit court que* as ‘there’s a rumour that’. This links *bruit* to the concept of *noiseuse*, but also to a more ancient understanding of rumour, leading to Fama the Roman goddess of rumour, who spread her wrath through the propagation of gossip, which is to say, the introduction of informational noise into the social system:

There is a place in the middle of the globe, between the zones of earth and sea and sky, at the borders of the triple world. From here all that exists is seen, no matter how remote, and every voice reaches listening ears: Fama lives there, choosing for her seat the highest place, adding entrances without number, a thousand openings, and no doors to stop up the thresholds. It is open night and day, made all of resonating bronze. Everything reverberates: echoes voices and repeats what is heard. There is no peace within, no silent place. But nor is there clamour, only the low murmuring of voices, like the waves of the sea, if you hear them from a distance, or like the sound of distant thunder, when Jupiter makes the dark clouds resound. (Ovid, ed. Horace Gregory, 1958, 326)

It is in these early texts that that we find the roots of noise.⁹ Ovid’s depiction of Fama in *Metamorphoses* describes a place in which noise is something that is universal; there is no silent place. Noise here exists as a constant murmuring of the background.

The semantic subtleties of the French terms for noise have been stripped down in English translation to refer principally to unwanted sound, or more broad-

⁹ Fama is also the subject of Book IV of Virgil’s *Aeneid*. For further reading on classical texts and noise, Martin Iddon, ‘Inside Fama’s House: listening, intimacy, and the noises of the body’, in *Noise In and As Music*, Aaron Cassidy and Aaron Einbond eds (Huddersfield, University of Huddersfield Press, 2013), 99–120.

ly, that which is unwanted or dirty. The complex semantic issues surrounding the term noise in English are indicative of the complex construction of noise, situating it as something that is both immediately present in the form of fury, and also present in the background. Through a simple discussion of the etymological roots of the term, it is clear that noise is somewhat more complex than it first appears. Whilst Noise Music exists as genre, the terms ‘a noise’ and noise *qua* noise can be applied here: Noise *qua* noise can be understood as noise in the background, or *noiseuse*, whilst a noise can be equated with the word *bruit*, which in this instance can be understood as an occurrence that is identified as noise. There is in the terms *noiseuse* and *bruit* a sense of the multiple: a term that is key in the study of relations, and consequently of ontology. Before an examination of noise’s relationship with ontology can take place, however, there is a need to outline that way in which noise is understood as relational within this project, which is to say, through the study of communication.

1.5 Claude Shannon: noise and communication

At the opening of this document I noted that music is often understood to be the antithesis of noise. Despite this claim, noise and music do have one commonality: both are concerned with the act of communication. The act of writing music can be understood as a form of communication in and of itself; noise can be understood as a barrier to that communication. There is a need to draw attention here to a distinction between noise as ‘concept’ and a material manifestation of a noise in the world, which is to say that there is a difference between the sound of a drill being identified as a noise and noise *qua* noise. Since this project is concerned primarily with noise as concept—though, admittedly, *through* noise as manifestation— it is necessary to discuss noise through the effect that it has on other things. For the purposes of this project, that relational pivot will be the act of communication.

The foundational model for communication around which I have based my analysis is taken from Claude Shannon’s ‘A Mathematical Theory of Communication’.¹⁰ This model situates noise as an external source that interrupts the path of communication between transmitter and receiver:

[T]he signal is perturbed by noise during transmission or at one or the other of the terminals. This means that the received signal is not necessarily the same as that sent out by the transmitter. (Shannon, 1948, 397)

¹⁰ *Bell System Technical Journal* (27:1948), 379-423 and 623-656.

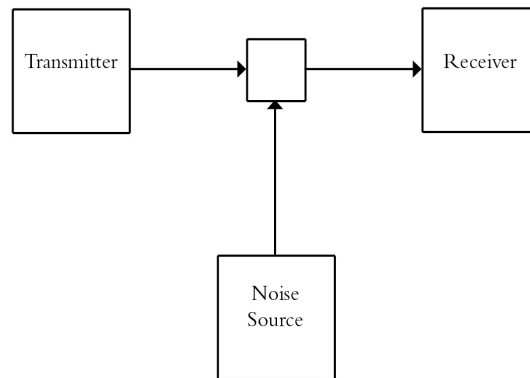


Figure 1.1: Shannon's noise

Shannon posits noise as being a fundamentally external force that acts upon information either during transmission or at one of the points in the communication process. This space between sender and receiver is referred to as ‘the channel’, and is a component of the communication process that will be visited repeatedly during this review. The content that is transmitted through the channel will be referred to as the ‘message’ and the ways in which this message is changed during transmission will form the basis of much that follows. The concept of ‘pure message’ is another term that will be utilised in this document and refers to content that passes from sender to receiver that has not changed in terms of either content or form. The ‘pure message’ is what might be understood as the perfect communication, which is to say communication that is devoid of noise.

It is important to understand that Shannon posits noise in relation to what is around it; in his model, noise can only exist in relation to the transmission of information between sender and receiver. The act of constructing an understanding of things through relationships suggests that noise is not necessarily bound by understanding, or as a part of knowledge, but rather by what there is in the world. This way of thinking—in the form of relations—can be understood as a kind of ontology. Ontology is a branch of metaphysics that stands in relation to epistemology: whilst epistemology is concerned with the limits of human knowledge—what can be known—ontology is interested in the construction of being, asking not what we know, but what there is. This distinction is very important, as whilst human knowledge is forever expanding, being is constant (yet, arguably, unknowable). This leads to the questioning of noise’s status in relation to knowledge, which is to say ‘is noise a constant “thing” that exists independently of knowledge, or is it a construct of knowledge? Or, finally, is it both?’ It is to the study of ontology that this project

now turns, and specifically the way in which ontology might interact with the idea of noise *qua* noise.

1.6 Ontology: literature review I

The combination of noise with ontology—and specifically multiplicity—is not something that is new to the study of noise. Michel Serres has discussed noise and being side by side in *Genesis* (1982) and, more recently, Greg Hainge has written about the subject at length in his book *Noise Matters: Towards an Ontology of Noise* (2013). In *Noise Matters*, Hainge posits that noise is subject—rather than object—based and that

[n]oise will be figured here as the trace and index of a relation, that itself speaks of ontology. If noise is then immersive, this is not because it is all-pervasive and seeps through walls as the anti-noise lobby would claim, nor because we cannot shut out ears as we can out eyes. Rather, noise is immersive because there is nothing outside of it, and because it is in everything. (Hainge, 2013, 13).

Here Hainge makes an important point. The suggestion that noise is not immersive because it is loud, but because there is nothing outside of it, and because it is present in everything, is an idea that will occur on multiple occasions in what follows. Hainge suggests in this passage that noise is multiple in its iterations; it exists as subject rather than object, and is therefore relational. However, whilst Hainge is concerned with an immersive noise, it appears that the being he is concerned with is still a being of ‘the one’.¹¹ It is the ontology of Alain Badiou—and specifically the work *Being and Event* (1988)—that concerns my project, and the notion of one-ness is fundamentally opposed to Badiou’s reading of being. I will spend some time unpacking the issues surrounding Badiou’s ontology, first by looking at the work of earlier thinkers whom Badiou credits as influential to his project, and then by considering several aspects of Badiou’s ontology, specifically the concepts of consistent and inconsistent multiplicity in being; the notion of count-as-one; the event in being; and the notion of void. I will also look at Badiou’s ‘conditions’ and how one might approach the creation of art with Badiou in mind.

¹¹ The notion of a being of the one, and other complex ideas (such as pure multiplicity) will be dealt with over the course of this section.

1.6.1 Episto-Ontology: ontology before Badiou

The notion of an understanding of being on an ontological level—both the ‘episto-ontological’ ontology of Heidegger, and Deleuze and Guattari, and the ‘true’ ontology of Badiou—is an extremely complex issue, and one that merits (more than) a doctoral thesis in itself. This introduction, however, is intended to function as a basic grounding in some of the issues that present themselves in the course of the literature review and seeks to accustom the reader with some of the theory that problematises the concept of noise and its position in relation to other apparently human phenomena.

Badiou’s study of ontology signifies a departure in the consideration of being. For Badiou, philosophy in isolation is able to describe truth, but is not able to *create* truth. This includes the philosophical discussion of ontology. The central issue for Badiou is that ontology has previously only been discussed in terms of the epistemological, which is to say that being is discussed within the limits of knowledge. Peter Hallward suggests that Badiou’s position on truth is different from that of near contemporaries such as Theodor Adorno and Jean-François Lyotard who ‘pick out and celebrate instances where conceptual thought breaks down in favour of an aesthetically accessible reality beyond the concept’ (Hallward, 2003, 193). In Badiou’s terms, truth is not to be found in philosophy alone, but through the congress of philosophy and four conditions: art; politics; love; and science. Badiou asserts that there are three established methods of conflating art and philosophy: the ‘didactic’ which argues that art can only imitate truth; the ‘romantic’ which argues that ‘art alone is capable of truth’ (*Ibid*, 194); and the ‘classical’ which asserts that art is not only incapable of truth, but that it is also incapable of imitating it (*Ibid*). Badiou occupies a fourth position in which he states that ‘what art teaches is nothing more than its existence. It is simply a matter of encountering this existence, which means: thinking a thought’ (*Ibid*, 195). Here Badiou states that the creation of art and the thoughts generated through engagement with that art are inextricable, an important fact when attempting to deal with Badiou’s thought through the creation of music. Before considering Badiou’s ontology specifically, there is a need to grasp some of the key issues of ontology as an area of study. To understand where Badiou starts, one must look back to his point of inspiration, that is, at least in part, to the work of Martin Heidegger.

Heidegger, who was, in Badiou’s words, ‘the last universally recognisable philosopher’ (Badiou, 2007 [1988], 1), posits being as ‘the most universal and emp-

tiest concept' (Heidegger, 1996 [1927], 1), which is to say, a space that is universally connected through the notion of a pure multiplicity,¹² and also empty owing to the indefinability of its nature. Put simply, one might understand being in terms of ontology as a construction of relationships. What might be considered to be 'one' or a single unit is, in fact, related to other apparently singular objects, and hence is always already becoming multiple. The relationship between different crossings or nodes of being is also one of multiplicity, that is to say that it does not have a central point of origin. Heidegger equates this to the notion of genus: '[b]ut the "universality" of being is not that of *genus*. "Being" does not delimit the highest region of beings so far as they are conceptually articulated according to genus and species [...] The "universality" of being "surpasses" the universality of *genus*' (Heidegger, 1996 [1927], 2).

Not only is the construction of being multiple, but also the notion of being *qua* being is one of multiplicity. Heidegger notes that '[b]eing is always the being of a being' (*Ibid*, 7), which leads one to conclude that being is not only multiple in terms of a singular construction, but that those constructions are also multiple. The concept of multiple constructions is also a key issue for Badiou, though he presents this idea in relation to the thinking of Gottfried Wilhelm Leibniz:

Leibniz's formulation is excellent; 'What is not *a* being is not a *being*'—yet it is also its impasse; an impasse in which the revolving doors of Plato's Parmenides introduce us to the singular joy of never seeing the moment of conclusion arrive. For if being is one, then one must posit that what is not one, the multiple, is not. (Badiou, 2007 [1988], 23)

Badiou states that the 'one' does not exist and that '[e]very "object" is reducible to a pure multiplicity.' (*Ibid*, 14). This multiplicity can be explained in relation to a person. A human being is made up of a body, which is in itself made up of organs, which are made up of cells, cell components, atoms, hadrons, and the so-called 'elementary particles': quarks, leptons, and gauge bosons. The term elementary particle is given to a particle that is believed to have no substructure. This term was given to hadrons and atoms before they were split. It is likely that the current elementary particles will be split further at some point in the future, therefore redefining the term once more. This line, or 'being of the body', also extends in the other direction to include a partner, a family, a community and so forth. This line, therefore, extends from elementary particles to the knowable extent of being. At this moment, that point would be the extent to which space has been explored and is, as a result, constantly expanding to include new things. This understanding of multiplicity is,

¹² Pure multiplicity is a central aspect of Badiou's thesis and will be discussed fully over the course of this section.

however, somewhat simplistic. The construction of the ‘being of the body’ on a single plane suggests that being itself exists in this way. Gilles Deleuze discusses the construction of being in relation to the folds in a piece of paper:

Thus a continuous labyrinth is not a line dissolving into independent points, as flowing sand might dissolve into grains, but resembles a sheet of paper divided into infinite folds or separated into bending movements, each one determined by the consistent or conspiring surroundings. ‘The division of the continuous must not be taken as of sand dividing into grains, but as that of a sheet of paper or of a tunic in folds, in such a way that an infinite number of folds can be produced, some smaller than others, but without the body ever dissolving into points or minima.’ A fold is always folded within a fold, like a cavern in a cavern. The unit of matter, the smallest element of the labyrinth, is the fold, not the point which is never a part, but a simple extremity of the line. That is why parts of matter are masses or aggregates, as a correlative to elastic compressive force. (Deleuze, 2006 [1988], 6)

The analogy of the paper asserts that being is not reducible to a single point (the grains of sand) but rather as a sheet in which infinite folds can be created without ‘dissolving into points or minima’. Whilst the paper itself is singular, it is not the focus here, it is, rather, the vehicle for the folds, or, more precisely, what the folds represent. Whilst the paper and folds are singular, the existence of the folds in the paper represent the fact that being has no singular point of origin, and it is this that Deleuze is highlighting. The folds are similar to another analogy used by Deleuze and Félix Guattari, namely the concept of the rhizome.

The rhizome is a naturally occurring phenomenon in plants where roots grow from nodes rather than a central point of origin. Whilst in trees the roots stem from a single point, namely the trunk, the roots from rhizomes—ginger, for example—derive from multiple nodes. This means that if one were to cut a piece of ginger off, that piece would grow by itself and produce more ginger. Any part of this new ginger could be cut and grown into more ginger again. There is no need for the new ginger to have any direct path back to the original ginger root. This question of the structural nature of being can also be read in terms of Deleuze and Guattari’s plateau: ‘A plateau is always in the middle, not at the beginning or the end. A rhizome is made of plateaus’ (*Ibid*, 21). Whilst it may seem possible to denote central points of singularity, Deleuze and Guattari state that this experience is only of the plateau; the central portion of being rather than its entirety. The notion of being ‘in its entirety’ is problematic in itself as Heidegger’s ‘genus’ suggests.¹³

Heidegger, and Deleuze and Guattari discuss multiplicity in complex terms; they are not concerned with singular lines, but rather more complex types of multiplicity. It is from these constructions that Badiou draws his own theories. However,

¹³ This is to say that *genus* is also a problematic analogy as ‘the universality of being surpasses the universality of *genus*’ (Heidegger, 1996 [1927], 2).

Heidegger, and Deleuze and Guattari all discuss multiplicity in natural terms: Heidegger with *genus*, and Deleuze and Guattari with the rhizome and the plateau. All of these allegories hint at an understanding of ontology that is bound by human understanding, which is to say that they are all bound up in natural phenomena. Badiou, however, draws his understanding of being from pure mathematics, which is abstract and therefore not ‘knowable’ in the same way as observations in nature.

1.6.2 Badiou’s ontology of mathematics: *Being and Event*

Badiou’s *Being and Event* was published in 1988 and it, along with *Theory of The Subject* (1982) and *Logics of Worlds: Being and Event II* (2006), constitutes his key writing on ontology. *Being and Event* looks at the ontology of mathematics, or, more specifically, the notion of mathematics *as* ontology. For the purposes of my project, there are several key terms that relate to my discussion of noise as multiple, namely the infinite (and by extension, the notion of consistent and inconsistent (pure) multiplicity), the count-as-one, void, and the event.

All of these terms—especially multiplicity—hint at the notion of the infinite.¹⁴ Infinity is usually discussed in relation to numbers and mathematics, and these are the terms in which it will be discussed here. Infinity is often thought of as a kind of number, usually articulated using a lemniscate (∞). This representation of infinity is, however, problematic in a discussion of ontology. The symbol is representative of a view that infinity is a number that is beyond reach, which is to say, more than one can count. This implies that there is a single notion of infinity. Georg Cantor suggested, however, the existence of infinite sets or different types of infinity. Infinity represented as the set of all natural numbers is seen as being countably infinite, which is to say that a route can be created that includes all of these numbers and stems from one. This is referred to as the Aleph-null (\aleph_0) set. In essence, the notion of infinity as a number is a misinterpretation of the concept. Rather, infinity is concerned with the notion of cardinality, which is to say, groupings of numbers rather than the numbers themselves.

¹⁴ From the Latin *infinitus* tr. unboundedness

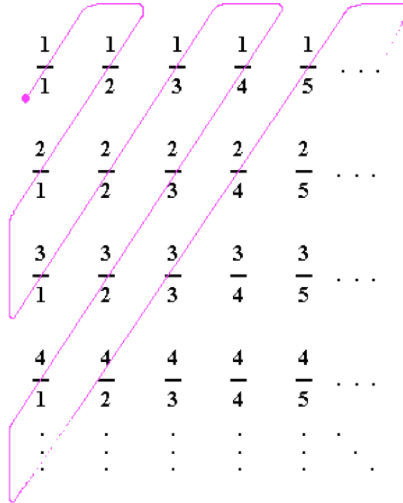


Figure 1.2: countable infinity

In addition to the Aleph-null set, Cantor proposed that there is also a set that contains all real numbers, which is to say all natural numbers in addition to other irrational numbers such as π and $\sqrt{2}$. This set therefore includes numbers that do not stem from one and are consequently not countable in the same way as the diagram above. This uncountable infinity has no linear trajectory that can be traced and is known as the Aleph-one (\aleph_1) set. The Aleph-one set and subsequent uncountable sets—one might include an Aleph-Aleph (\aleph_\aleph) set here—are the kind of sets that are most useful in a discussion of ontology as they include not only the things we do know (natural numbers), but also the things that we *cannot* know (other real numbers).¹⁵

In *Being and Event*, the infinite is dealt with through the concept of countable and uncountable—also described as consistent and inconsistent—multiplicities. Christopher Norris quotes Badiou’s central thesis of ontology, which comprises two themes: first, ‘[t]he multiple from which ontology makes up its situation is composed solely of multiplicities. There is no one. In other words every multiple is a multiple of multiples’ (Badiou, 2007 [1988], 29); and second, ‘[t]he count-as-one is no more than the system of conditions through which the multiple can be recognised as multiple’ (*Ibid*). These two points, Norris asserts, are relative to a distinction between consistent and inconsistent multiples. The consistent multiple is defined as ‘that which results from some preceding count or formal operation’ (Norris, 2009, 40). This is comparable with a countable infinity, or Aleph-null. The inconsistent

¹⁵ One might consider the fact that the construction of infinity as a concept is, in fact, inherently multiple, and that there are an unknowably infinite number of types of infinity or infinite sets.

multiple on the other hand is that which ‘must be thought of as itself pre-existing, surpassing and eluding the count-as-one yet also—since of course that operation must have something to operate on—as providing its necessary starting point or precondition’ (*Ibid*). It is in the distinction between consistent and inconsistent multiplicity that Badiou situates the term ‘count-as-one’. Whilst consistent multiplicity—the concept of number, for instance—is made up of apparently singular units that may be added together to make something larger, Badiou claims that these units do not actually exist. Rather, the parts exist as count-as-one units, which allow the concept of number to exist. The count-as-one allows for a ‘knowable’ understanding of consistent and inconsistent multiplicity to be.

It is in the notion of the inconsistent multiple that Badiou situates his void, which is to say, through the concept of subtraction:

[T]his central truth of ontology—the truth of its essentially subtractive character—is concealed from most enquirers simply through the fact that *by very definition* those excluded elements cannot figure within the count-as-one or be perceived as integral or constituent parts of any existent situation. (Norris, 2009, 62)

The inconsistent multiple is one of those excluded elements and thus a key to ontology’s central truth, as Badiou conceives it. Badiou defines the inconsistent multiple as a ‘[p]ure presentation retrospectively understood as non-one, since being-one is solely the result of an operation’ (Badiou, 2007 [1988], 511). The inconsistent multiple is that which eludes the count by existing before and after it, as well as being a constituent part of it. In this sense, the term inconsistent multiple and void are interchangeable.

A discussion of the nature of the inconsistent multiple or void becomes problematic as the definition of an indefinable quality of being renders the quality to some extent definable and therefore consistent. Norris discusses this issue and asserts that the idea is not one that the human mind can maintain as a constant:

Indeed it is precisely in the need for such an operation—the inability of thought to achieve a proper sense of conceptual purchase except on condition of reducing inconsistent to consistent multiplicity—that the ‘something’ in question most strongly manifests itself as preceding and exceeding the count-as-one. (Norris, 2009, 63).

If being is represented on a micro-scale as existing around a single atom, then void can be shown as present both within the atom, within knowable being, and outside of knowable being:

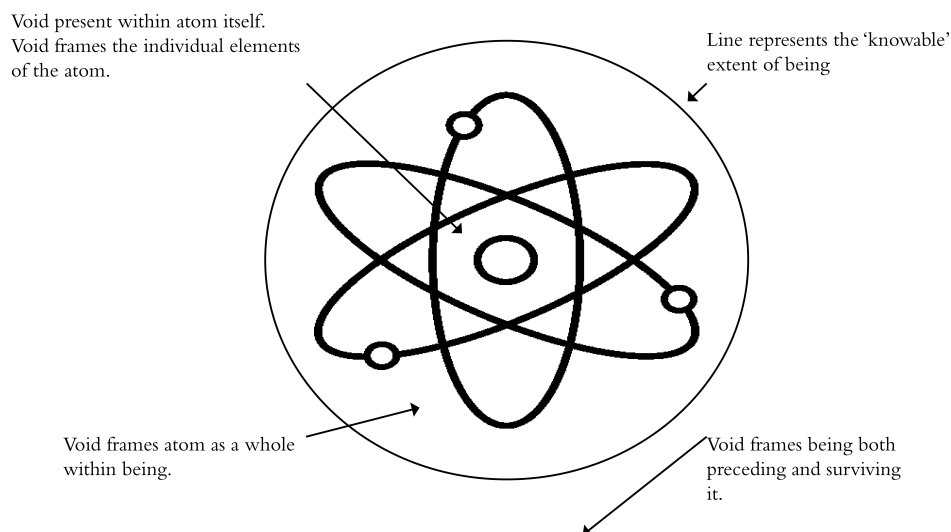


Figure 1.3: void in an atom

The Badiouian void is, therefore, present within knowable being (the consistent multiple) and outside of it (the inconsistent multiple). Badiou is not the first person to make these suggestions about the role of ontology in relation to truth. He is, however, the first person to engage with ontology on a *truly* ontological level. Through the use of post-Cantorian set theory, Badiou is able, to some extent, to demonstrate the theories that he sets out in relation to Heidegger's *Being and Time*. Badiou uses mathematics to prove that being is constructed around the notion of pure multiplicity and that Cantor's different infinite sets demonstrate the existence of void that both precedes and survives knowable being.¹⁶ Being as discussed here is in essence an epistemic phenomenon; being is in itself a presentation. This knowable being is, however, validated by the notion of void and the inconsistent multiple. Knowable being is nothing more than a plateau on which ideas may be presented and discussed.

The contrary aspect to Badiou's construction of being is the notion of the event, a development of the rhizoid construction of being discussed in *A Thousand Plateaus* (1980), which is to say that the event stands in direct contrast to being in the first instance; it forms a wholly new node to the web/rhizome of being.

Events [...] are just those strictly unforeseeable and—as they appear at the time in question—wholly contingent interruptions of the new that may turn out to exert a uniquely powerful and lasting effect but which elude ontological specification precisely insofar as they belong to no existing (i.e. up-to-now thinkable) order of things. (Norris, 2009, 9)

¹⁶ Some scholars do take issue with Badiou's use of set theory. See Sam Gillespie, *The Mathematics of Novelty: Badiou's Minimalist Metaphysics* (Melbourne: re.press, 2008).

Not only is this event something that is new at the time, but also something that ‘may turn out to exert a uniquely powerful and lasting effect’. One example of this, namely Saint Paul’s Damascus road conversion,¹⁷ is something that Badiou has written about extensively. Of this event Badiou notes two distinct characteristics: ‘The Christian subject does not pre-exist the event he declares [...]. Fidelity to the declaration is crucial, for truth is a process, and not an illumination’ (Badiou, 2003 [1997], 14–15).

The conversion exists as something wholly new, not only to Paul’s ontology, but also to the ontology of humanity. This is owing to the fact that, whilst in the first instance, Paul’s conversion affected Paul alone, as time passed, the conversion’s impact spread to a global audience. This highlights the temporal nature of events, which is to say that an event’s status as event in Badiou’s terms is only quantifiable over time. The passing of time gives structure to the event paradigm, in other words, events, like being, can be organised into a hierarchy—the knowable being of the consistent multiple and the unknowable being of the inconsistent multiple—which is to say that an event may be seen as such at one point in the being of being, but not at another. The publication of Luigi Russolo’s *L’arte dei Rumori* (*The Art of Noises*) in 1913 might be seen as an event in the sense that it was something wholly new, and something that led to noise being acknowledged in music and received as true from that point onwards. Though this is an event in terms of the ontology of noise, it may not be seen as an event further down the line of ‘meta-being’ in the same way as Paul’s conversion. All manifestations/presentations of noise can be seen as events within the ontology of the paradigm in which they are situated.¹⁸ This definition includes manifestations of noise in the everyday, such as exposure to loud and/or harsh sounds. However, when viewed within being on a broader level, this event may cease to exist as such. It can be concluded, therefore that the event is not that which takes the form of an illumination, as it would be seen in the writings of Heraclitus. Rather, the event merely ‘becomes’ as the truth process occurs. The event—like truth—only exists in relation to a process, which is to say that its true impact is only seen over time.

The relationship between illumination and process also raises the question of becoming and its place in the role of truth. This tradition of becoming can be traced

¹⁷ This is the biblical story of Paul the Apostle’s conversion to Christianity on the road to Damascus, told in the book of Acts 9:3-9.

¹⁸ I refer to paradigm here as a construct that is accepted as normative in society, for example, the physiological paradigm of the brain lung relationship is that the brain sends a message to the lungs telling them to inhale or exhale. For further reading on the construction of paradigms please see Thomas S. Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1996).

from Badiou back to Heidegger, and then through the path of analytic philosophy to Pre-Socratic thought, specifically the work of Heraclitus and Parmenides. Heraclitus's view of the world was one that constructed life as a series of unveilings or illuminations that might be referred to as events. He stated that '[t]he river/where you set/your foot just now/is gone—/those waters/giving way to this,/now this' (Heraclitus, tr. Haxton, 2001, 27). Heraclitus notes that even though one might step into the river at the same point each day, the water is constantly flowing and is therefore new. This changes the way that the river is and changes one's experience of that river, and consequently, the world. Heraclitus also notes that it is not just the river, but also his own state of being that is in constant flux: 'Just as the river where I step/is not the same, and is,/so I am as I am not' (*Ibid*, 51). Parmenides, on the other hand, argues against the notion of a constant flux or change stating that 'what is there for speaking and thinking of is [...] whereas nothing is not' (Parmenides, tr. Gallop, 2000 [1991], 61). This notion undermines the thinking of the Heraclitian event, suggesting instead an all-encompassing construction of being, in which nothing is ever really new. This thinking, one might argue, is the outlining of a basic principle of ontology, which is to say, the notion of interconnectedness between different aspects of being. The Heraclitian notion of a constant flux is, when thought of in these terms, little more than an illusion born of the ignorance of humans in their experience of a supernaturally perfect world. This notion of an illusion is also connected to the concept of a thinkable truth, which is to say, '[t]hinking and the thought that it is are the same; for you will not find thought apart from what is, in relation to which it is uttered' (*Ibid*, 71). This draws a relationship between thought and the real, terms that might be reconceived as the abstract and the empirical, the notion of which can be traced back to the theory of the Platonic Form.¹⁹

The abstract, in terms of Platonic Form, is that which does not exist in a temporal sense but rather as an indicator of order. The abstract is form, the perfect example of the type. The empirical on the other hand is the real world articulation of the abstract: the concept of apple is abstract, it does not exist in the real world, but the red apple sitting in my fruit bowl does. This notion is also applicable to speech and music. The word 'word' is abstract—though this is also problematic as the written 'word' is an empirical articulation of the form in itself—but when spoken it becomes empirical as it is framed in the temporal space in which it is uttered.

¹⁹ See Plato's analogy of the cave in Plato, *The Republic* (Oxford: Oxford University Press, 1993), pp. 241-248.

This is, however, more complex than it first appears, as both the abstract and the empirical have multiple types that relate to social constructs and understandings of what is. For the sake of this thesis a simple understanding and awareness that these issues are complex will suffice. As I have mentioned, the study of ontology through the work of Heidegger, Deleuze and Guattari, and Badiou is vast and far surpasses the space afforded to it here. However, this introduction to the theory serves as an important framework upon which one can contextualise the study of noise. It is with this in mind that I turn to noise itself and discuss some definitions of noise proffered by others, both on a broadly social level, and specifically in relation to music.

1.7 Noise as multiple: literature review II

1.7.1 The literature of noise

Writing on noise can be understood to occupy three specific periods in the last forty years. This reading discounts the classical texts on noise such as Ovid's *Metamorphoses* and Book IV of Virgil's *Aeneid*, both of which discuss noise and the goddess Fama.²⁰ The other clear omission in this project is Luigi Russolo's *L'arte dei Rumori* (1913). Russolo's text is seminal and could be said to pave the way for much of the literature that followed it. However, Russolo is more concerned with the noise of industry, rather than noise in any abstract sense as is the focus here. My focus upon texts since the 1970s represents an engagement with writing that has already reacted in some ways to the texts that have been omitted, and further study would, I feel, do little to expand on published material.

The first wave of texts about noise in the second half of the twentieth century occurred during the late 1970s and early 1980s with the publication of Jacques Attali's *Noise: The Political Economy of Music* (1977), and with the publication of three works by Michel Serres, namely, *The Parasite* (1980), *Genesis* (1982), and *The Five Senses* (1985). The publication of these texts in French ran roughly in line with the publication of two major works by Badiou, namely *Theory of The Subject* (1982) and *Being and Event* (1988).

The second wave of texts were written in the first decade of the twenty-first century and include Douglas Kahn's *Noise Water Meat: A History of Sound in The Arts* (2001), Paul Hegarty's *Noise/Music: A History* (2007), and Steve Goodman's *Sonic Warfare: Sound Affect and The Ecology of Fear* (2010). This wave of writing

²⁰ Whilst a general discussion of Ovid is omitted, there is mention made of *Metamorphosis* in a discussion of noise's etymology on p. 4.

about noise by English-speaking authors coincides with the translation of texts by Badiou and Serres into English—*Being and Event* (2007) *The Parasite* (2007), *The Five Senses* (2008), *Theory of the Subject* (2009)—and also the publication of Badiou’s follow-up to *Being and Event*, *Logics of Worlds: Being and Event II* (2006).²¹

The third wave of texts have been published since 2010 and are a combination of edited collections—*Reverberations: The Philosophy Aesthetics and Politics of Noise* (2012); *Sound Music Affect: Theorizing Sonic Experience* (2013); *Resonances: Noise and Contemporary Music* (2013); and *Noise in and as Music* (2013)—and monographs, including Salome Voegelin’s *Listening to Noise and Silence: Towards a Philosophy of Sound Art* (2010), Hillel Schwartz’s *Making Noise* (2012), Greg Hainge’s *Noise Matters: Towards an Ontology of Noise* (2013), and David Novak’s *Japanoise: Music At The Edge of Circulation* (2013). The works since 2010 are a continuation of the work done in the previous decade and represent the development of noise studies as an area in itself as opposed to earlier studies, which can be considered as a sub-discipline of sound art. These publications have been complemented by a number of international conferences on the subject of noise including: ‘Noise.Affect.Politics’ (University of Salford, 2010), ‘ISTCC: Noise, bytes bits: states of sound’ (University College Cork, 2012), ‘Noise Nonference’ (Qubit, New York, 2013), and ‘Noise in and as Music’ (University of Huddersfield, 2013).

Readings of these and other key noise texts suggest that noise can be understood to fall into three broad categories: (1) noise as overcoming, (2) fragmentation, and (3) mediality, and it is to these texts that I now turn.

1.7.2 Noise as overcoming

This section deals with texts that posit noise as an external force that seeks to overwhelm the receiver in some way by flooding them with excess information.

²¹ I am not suggesting here that there is a direct relation between the publication of works by Badiou about being and subsequent publication of works about noise. Rather, I am suggesting that it is interesting to note that works about noise were published at a time in which there was prevalent thought about the way in which being is in the world.

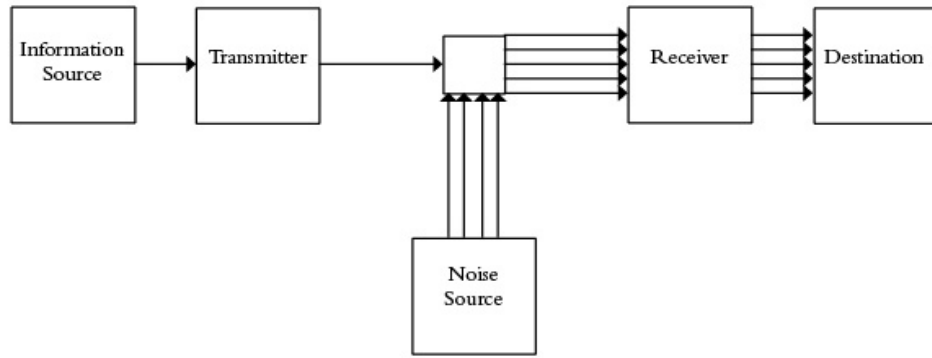


Figure 1.4: Goodman's noise as overcoming

This flooding can be understood as a form of affect, a term defined by Ian Biddle and Marie Thompson as '[t]he relationship between bodies [...] and the fluctuations of feeling that shape the experiential in ways that may impact upon but nevertheless evade conscious knowing' (Biddle and Thompson, 2013, 6). In this sense, the term affect comes to mean a pre-cognitive reaction eliciting a pre-linguistic, reflex-like, response. This allows noise to be used as a tactical weapon that triggers that affective response. Steve Goodman's *Sonic Warfare: Sound, Affect, and the Ecology of Fear* (2010) is based on a discussion of the role of noise as physical affect. In figure 1.4 noise is situated as an event: a change to the process's being that is wholly new and distinct. This event is also something that the receiver will be forced to receive as true, which is to say that the being of the message is changed and accepted as such by the receiver. In essence, the receiver do not have a choice as to the acceptance of the message. Goodman uses the deployment of sonic weapons to illustrate this point: 'The vibration [caused by noise] moves up through your body, constricting your organs until it is in your chest and throat, making it impossible to breathe' (Goodman, 2010, xiii). This contextualised process is summarised thus:

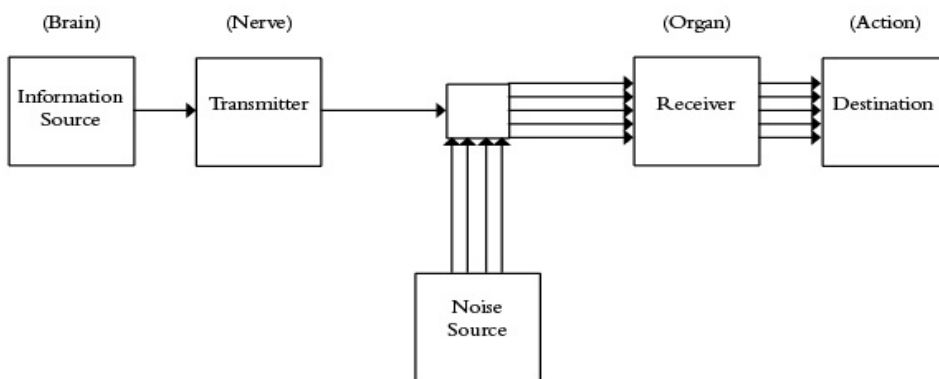


Figure 1.5: Goodman's noise as overcoming (body context)

In this example, noise is manifested in the sound created by the sonic weapon. The sound from the weapon floods the receiver with excess information. It is not that the original message has been removed or destroyed, but rather that the receiver is overcome, reducing the chance of the ‘intended’ message being received. To use Goodman’s ‘noise bomb’ example, the manifestation of noise has a visceral, affective response upon the lungs causing them to miss the information being sent by the brain.

As noise is acting externally and altering the ontology of the original communication, noise here can be understood as an event. However, since the so-called event takes place at the point of transfer between the transmitter and the receiver, it could be concluded that noise is *dependent* upon the process of communication. Whilst this example is just a manifestation of noise, the same issues remain when the specific parameters are removed. If the model is correct, then noise as overcoming will always require the presence of a communication transfer to manifest itself: without a manifestation, noise cannot be shown to exist. If noise as overcoming must interact with a process, then noise cannot exist without the information that it overcomes.

This process is, in fact, more complex. The notion that noise is an overcoming of the senses on a psychological and physical level is clear enough. In terms of the ontology of this process, the overcoming of the receiver by sound is an event. This is the being of an empirical articulation (the sound of the bomb),²² and the being of a physical paradigm (the nervous impulses of the brain) meeting and creating an event in the form of a discrepancy.²³ The ontology of the sound does not conform to the parameters of the paradigm and thus there is an event, an exposure of something that is already a part of being as noisy, changing the way that being is. It appears that a question is presented here: is noise as a process of overcoming an event? In the Badiouian sense of the term the answer is both yes and no. Whilst the event may introduce something that is new to the paradigm of the situation in which that manifestation occurs, the paradigm—within a construct of being that is predicated on pure multiplicity—is inherently knowable. A building exploding is an event on the level of the town in which it happens and perhaps even globally, but the event fades over time. Whilst Goodman’s noise appears at first to operate as an

²² An empirical articulation is a cognitive stimulus that is understood to be occurring in the ‘real world’, for example, a police siren in the street.

²³ A social paradigm is a situation that is considered normative, for example, sitting silently in a concert hall whilst a performance is occurring. The term discrepancy here is used to define a situation that is not normative to the experience of the receiver. What may be considered noise by a civilian member of the public might not be considered so by a member of a bomb-disposal squad.

event, it becomes clear that the conditions under which an event can occur are more complex and that the event in this case may be little more than the exposure of another part of the being of communication.

Salomé Voegelin, like Goodman, posits noise as the same kind of overcoming experience. For her, however, this takes a slightly different form, that of isolation: ‘Noise does not have to be loud, but it has to be exclusive [...] sound is noisy when it deafens my ears to anything but itself’ (Voegelin, 2010, 43–44). This exclusivity develops Goodman’s noise structure, overwhelming but also isolating the listener. The overcoming experience—the external being that intercepts the communication as an event—is the same, but the concept of a destination becomes less important. Voegelin’s noise may be represented thus:

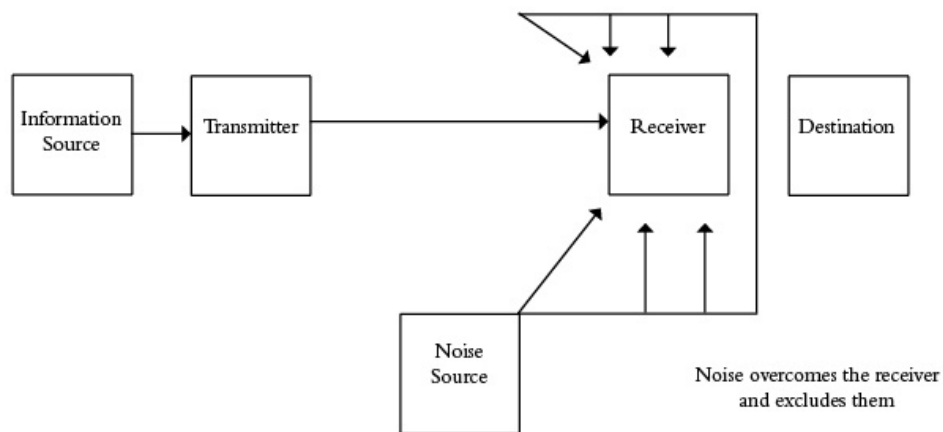


Figure 1.6: Voegelin’s noise as overcoming

Here it can clearly be seen that noise is posited as an event that overwhelms the receiver with information. Rather than there merely being ‘too many options’—as in Goodman—noise isolates the communication at the point of reception, stopping it from reaching its destination at all: ‘Noise does not demand my attention but grasps it literally to the exclusion of all other sensorial possibilities’ (*Ibid*, 47).

This overcoming experience—an isolation of the senses—is not exclusive to the receiver, however: ‘Noise is not necessarily an authorial act but an experimental space where the composer submits himself to the noises made’ (*Ibid*, 48). Voegelin situates the performer as the creator of the noise source in its manifestation of the sonic. This in turn is relayed back to them as a performer, isolating their experience. The product of this ‘authorial experience’ is then understood to be an addition to his or her own experience of the noise on a sonic level.

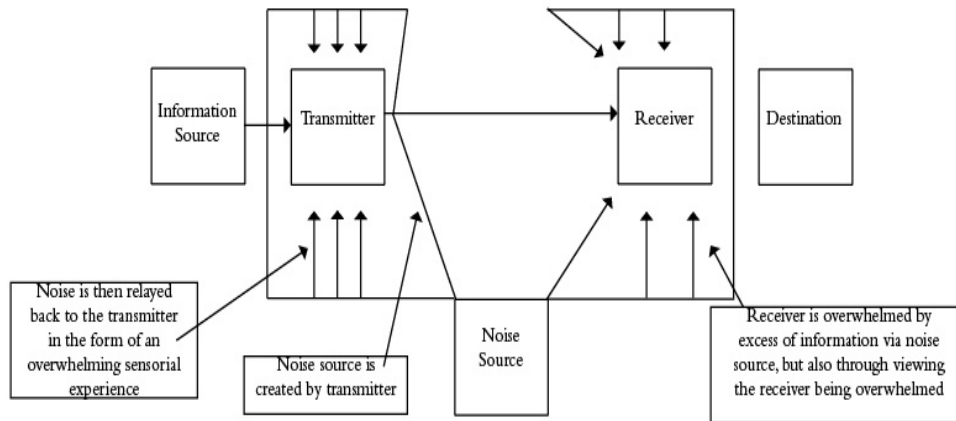


Figure 1.7: Voegelin's noise as overcoming (including overcoming of sender)

One criticism of Voegelin's construction of noise would be in its singular concentration on 'the sonic'. Though noise is often manifested through sonic means, one need not accept that noise *is* sonic, or rather, that the sonic is always heard. Noise in this context *is* sonic, though the frequency at which it is transmitted is below that which is audible to humans and is therefore felt rather than heard. In figure 1.7, noise is manifested in the sonic; this is not noise *qua* noise, but rather a noise. The sounds presented to the listener already exist and are merely being distributed by the performer. The performer's role in this situation is to frame sound in such a way that is considered 'noisy' by the listener. If noise in this sense is a matter of framing, then it is conceivable that any sound can be posited as noise.²⁴ Noise is not necessarily present in content, then, but rather in the labelling of that content as noise in that instance. Voegelin does discuss noise more broadly, suggesting that a 'noise map' of London would, in addition to sonic noise hotspots, reveal 'social relations on its fault lines of taste and tolerance' (*Ibid*, 45). This is indicative of how noise might work on a wider level, which is to say, on a level other than the sonic. The 'fault lines of taste and tolerance' are suggestive of sites at which paradigms and articulations might meet. Ontologically speaking, noise is the product of those cultural paradigms outlined by Voegelin, be it the sound of the neighbour's stereo: '[n]oise is other people's music' (*Ibid*, 44)—or '[d]ancing at a loud dark rave in a big factory hall outside Zürich' (*Ibid*, 46).²⁵ However, Voegelin's noise model is only

²⁴ See Mooney and Wilson in *Resonances: Noise and Contemporary Music* (London: Bloomsbury, 2013) for a case-based discussion of pop music as noise in the music of Filthy Turd.

²⁵ The use of rave in this context is more complex, however, as the paradigm that is constructed around that situation is one of affect; the notion of a transcendental experience that is attained through exposure to extremely loud sound. For further reading see Graham St John, *Rave Culture and Religion* (London: Routledge, 2004).

useful in a discussion of noise as overcoming, and specifically in relation to Noise Music. To this end, the model is useful, though only as noise *qua* sound.

1.7.3 Noise as fragmentation

Whereas noise as overcoming operates by flooding the receiver with information, noise as fragmentation operates upon the message itself, acting as a form of rupture that causes the message to be broken, meaning that the receiver receives only part of the original message. Like noise as overcoming, noise as fragmentation situates noise as an external event as contrasted with noise as mediality—discussed below—which situates noise, not externally, but within the channel of communication itself.

Jacques Attali’s book *Noise: The Political Economy of Music* (1985 [1977]) takes noise to mean a number of different things, two of which will be discussed here. Attali opens by positing noise as something that is ever present in the background, an idea that I will return to shortly. However, this understanding of Attali’s noise should not be confused with Attali’s understanding of *a* noise.²⁶ Whilst Attali’s super-structural noise is situated in the background, noise on an infrastructural level is manifested in the form of a violent rupture: ‘[n]oise is violence, it disturbs. To make noise is to interrupt a transmission, to disconnect, to kill. It is a simulacrum of murder’ (*Ibid*, 26). This definition seems clear enough. Noise is violence: it is a disruption, an interruption of a transmission. This interruption disconnects by blocking the flow of information and causing it to break apart. This fragmentation might be represented diagrammatically thus:

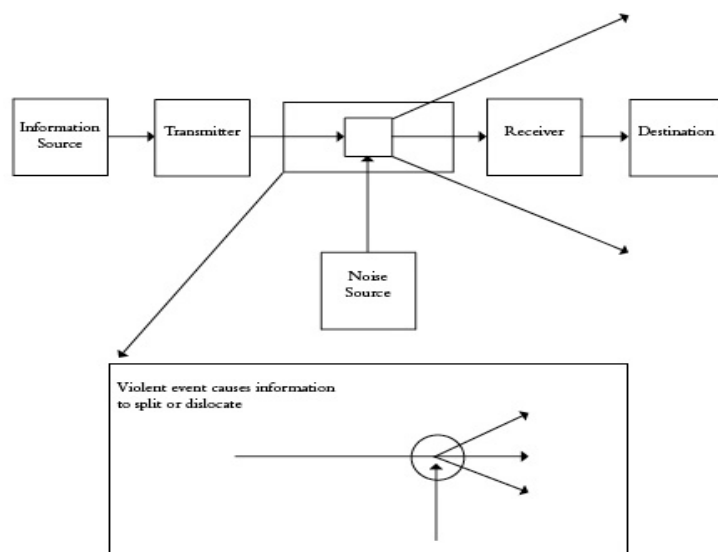


Figure 1.8: Attali’s noise as fragmentation

²⁶ This is similar to Leibniz’s assertion that ‘*a* being is not *a being*’. See p.9.

Here, noise is conceived of as a dislocation—or dis-location—of data. Noise attacks and causes a split in the information. This in turn causes some of the information to be lost or missed by the receiver. Noise in this instance—as with noise as overcoming—can be understood as a kind of pseudo-event. There are, then, two types of noise for Attali, noise as background, and noise as manifestation, though ontologically speaking these are the same thing, a singular that is inherently multiple.

There are some aspects of Attali's thinking that are somewhat more problematic. First, it would seem that he situates noise exclusively within sonic experience stating that the world 'is not legible, but audible' (*Ibid*, 3) and that we might understand the world 'by listening to noise' (*Ibid*). While Attali's understanding of *how* noise operates is very close to my own, his choice of medium is far more restricted. This could be, I think, a result of his aligning of noise with music, making the terms almost synonymous in his work. Attali also suggests that music—and by extension noise—is prophetic and that '[i]t has always been in its essence a herald of times to come' (*Ibid*, 4). This sentiment does not align with my own understanding of noise, as a manifestation cannot bring about change in being unless it is truly an event.²⁷ However, I think that this is not really what Attali means when he talks about noise here, but rather that movements in music act as a catalyst for societal change.

Michel Serres posits noise as a central aspect of his thought. Rather than discussing a single work by Serres, it is necessary to examine a range of his texts that deal with noise. The three texts discussed here are *The Parasite*, *Genesis*, and 'Boxes', the second chapter of *The Five Senses*. Noise is brought immediately to the fore in the first of these books published, *The Parasite*:

The city rat invites the country rat onto the Persian rug. They gnaw and chew leftover bits of ortolan. Scraps, bits and pieces, left-overs: their royal feast is only a meal after a meal among the dirty dishes of a table that has not been cleared. The city rat has produced nothing and his dinner invitation costs him almost nothing [...] But we know that the feast is cut short. The two companions scurry off when they hear a noise at the door. It was only a noise, but it was also a message, a bit of information producing panic: an interruption, a corruption, a rupture of information. (Serres, 2007 [1980]), 3)

Serres situates noise as an interruption. The process being interrupted is that of the parasite, and noise—in some ways the ultimate parasite—parasites not only the previous member of the chain, but the entire system. In this sense noise is a parasite that parasites parasitism, a meta-parasite. This interruption in the form of noise acts as a rupture, not only in the flow of information being passed from parasite to parasite, but also to the very notion of parasitism; the types of communication being

²⁷ See pp. 14–15.

transferred are inherently multiple in this sense. Diagrammatically, Serres situates noise in the system thus:

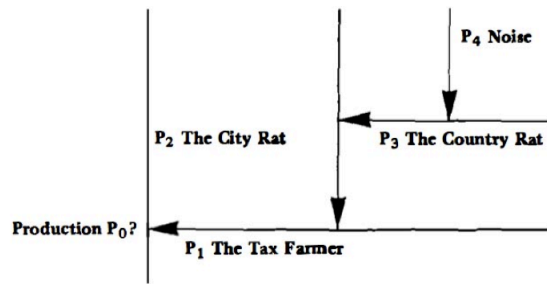


Figure 1.9: Serres's parasite model

This is an example of two types of parasite at work, the biological, manifested in the rats, and static (noise), manifested in sound. Whilst the farmer is the subject of a parasite—the city rat who in turn invites the country rat to eat the food left on the table—the noise acts as a parasite upon the country rat, but also alters the entire system: '[t]he rat taxes the farmer, the guest exploits his host [...] the noise, the ultimate parasite, through its interruption, wins the game' (*Ibid*, 4). In this way, noise is posited as an external event. It is something that blocks the system through an interruption. Therefore, one might construct the noise of Serres thus:

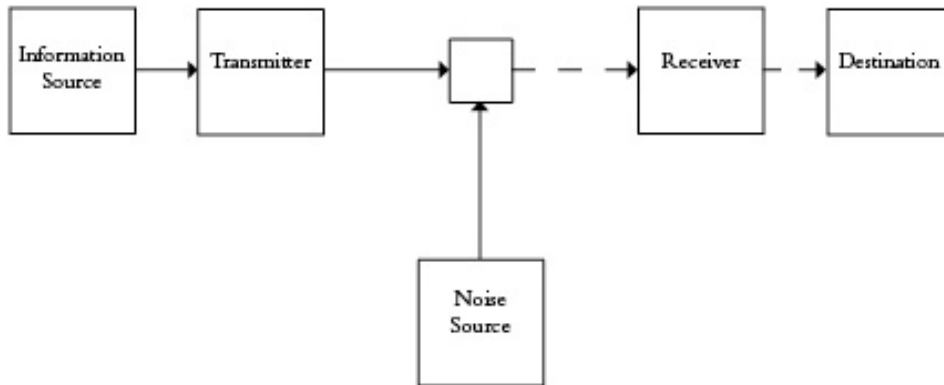


Figure 1.10: Serres's noise as fragmentation

Here noise blocks the path of information, again within the channel between transmitter (host) and receiver (parasite). In this sense noise is not only disruptive, but also transformative. Serres states that noise 'through its presence and absence, [and] the intermittence of the signal, produces the new system' (*Ibid*, 52). This process is noise begetting noise; the system in which the noise functions—the channel—is inherently noisy and one finds noise being created as part of a noisy process.

If noise is the propagator of new systems, then it could be concluded that noise is a necessary and beneficial aspect of the system. Indeed one might conclude

that, without the noise in the channel, the resulting material, noise or otherwise, would not exist. To take this system of communication as an example—which is to say, two stations and a channel—Cary Wolfe, in his introduction to *The Parasite*, states that ‘[s]ystems work because they do not work. Non-functioning remains essential for functioning’ (*Ibid*, xiii). This suggests that if one were to lose the noise in communication, then the frame of reference for success, or perceived success, would also be lost. In this sense, noise becomes a *necessary* part of communication.

Rather than an external event as suggested in figure 1.10, noise on these terms becomes part of the process of communication. Whilst it appears that the rats are interrupted by noise, the noise was always already there in the form of the channel. There is still a noise ‘event’, however: an exposition of an empirical articulation that clashes with the paradigm of parasitism that is thereafter seen as being noise. This exposition is brought about by something/someone who is external to the system. This is the tension caused between the ontology of communication and the social paradigms that are applied to that being, creating new beings and new noise events. This means that the locations of noise events are relative to the parameters of the social paradigm in which that being is experienced.

Another paradigm through which Serres discusses noise relates to sickness and the body: ‘Diaphanous, the world calms the turbulent noise of my body. My organs fall silent—health returns. Illness comes upon me when my organs can hear each other. Silence in the great theatre, in the capital of healing’ (*Ibid*, 2008 [1985], 85). Noise is again framed as a disruption to order, a sickness caused by unexpected information, a literal rupture in some cases. This is another aspect of life however: if noise is always part of the channel then sickness must always be present. The parasite enters the body and forces it to adapt or to reject. The rejection of the parasite is noise manifesting in sickness. The noise not only does damage however but also forces change. If the parasite does not cause an outright rejection then it forces the body to adapt in some way. Noise is not just a site of sickness; in addition to being disruptive, it is also transformative: ‘All that is not information, not redundancy, not form and not restraints—is noise, the only possible source of new patterns’ (Serres, 2007 [1980], xiii).

Serres’s noise is two-fold: destructive and transformative. Noise is always present and is representative of the multiple. Noise exists in the form of presentation—an episto-ontological event—but also precedes and survives that event. Noise is both being and void, something that is multiply present. This multiplicity is propa-

gated by Serres in his own output in the sense that his writing is not only conceptually noisy, but also literally as Wolfe notes:

In fact, Serres's work, in a profound sense, struggles against clarity, which is to say that it struggles, in a way, against language itself [...] This is why Serres's writing—though intellectually powerful and penetrating—is not analytical but experimental; not cumulative and aggressive, but discursive; not linear but meandering, doubling back on itself to remind itself of stones left unturned, details too readily smoothed over, conclusion too well-varnished. And then we're plunged back into the welter, back into the complexity of it all. Back into the sea foam of noise. (*Ibid*, xiii)

Wolfe asserts that Serres's writing is itself the noise in the channel, and there appears to be an acute understanding on his part that his writing on noise must occupy that liminal space. In this sense, Serres's writing style is often playful. He engages the reader through the use of stories and forces them to deal with complex abstract concepts in real terms. This insistent use of contextualisation is inherently concerned with a construction of being rather than an abstract suggestion of what one could know. One might compare Serres's use of the story with Badiou's use of set theory: each attempts to situate their thought within the context of the 'real'.

The message inherent in the three texts discussed here is that noise is multiple. Noise in the form of a parasite manifests itself in a body, forcing that body to adapt or to reject the intruder. In each case noise is present: the rejection suggests that the body becomes the site of violence, illness, or rupture, whilst an adaptation is suggestive of a different kind of response, a transformation or corruption.

1.7.4 Noise as mediality

Noise as mediality is different from the first two models of noise identified in this literature review.²⁸ Whilst noise as overcoming and noise as fragmentation are situated as external noise events acting upon the communication process in some way, noise as mediality is located within the act of communication itself, which is to say that

[t]he medium generates effects that attach to the message. Noise, therefore, is a constitutive feature of any communication. Noise is the presence of the medium through which the message must pass. (Crocker, 2007)

²⁸ Attali does suggest that noise is part of the background, but does not explicitly state that noise is part of the medium.

Noise, in Steve Crocker's terms, then, is a process of self-corruption from within the medium of communication, a corruption that permanently alters the message that can be understood thus:

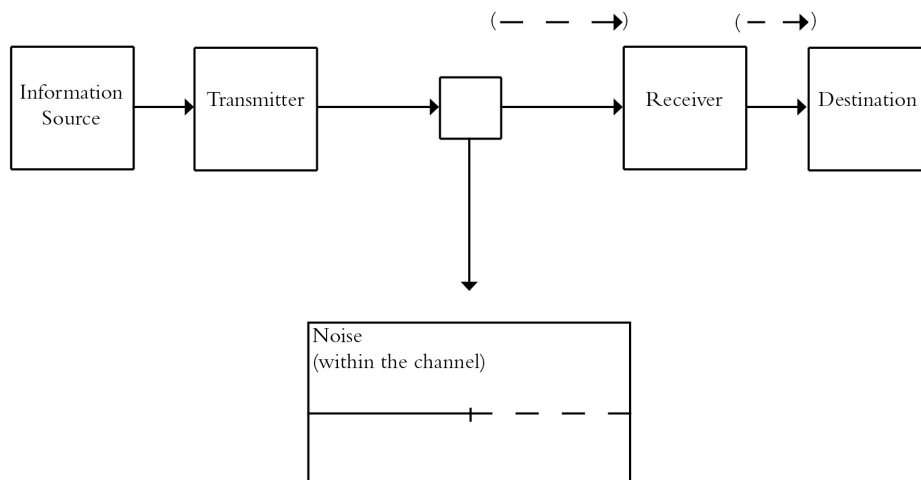


Figure 1.11: Crocker's/Serres's noise as mediality

Figure 1.11 demonstrates the importance of mediation in the process of communication, which is to say, it is the first diagram in this review that lacks any kind of apparent external noise event. Noise here comes from within the channel, or as an inevitable consequence of the channel's existence. This understanding of noise is essentially a summary of the thinking of Serres: the article is a reading of mediality in his work after all. Serres's position on noise and mediality can be understood in terms of his writing in *The Parasite*:

Systems work because they do not work. Nonfunctioning remains essential for functioning. And they can be formalized. Given, two stations and a channel. They exchange messages. If the relation succeeds, if it is perfect, optimum, and immediate; it disappears as a relation. If it is there, if it exists, that means that it failed. It is only mediation. Relation is nonrelation. And that is what the parasite is. The channel carries the flow, but it cannot disappear as a channel, and it brakes (breaks) the flow, more or less. But perfect, successful, optimum communication no longer includes any mediation. And the channel disappears into immediacy. There would be no spaces of transformation anywhere. There are channels and thus there must be noise. (Serres, 2007 [1980], 79)

Serres not only suggests that noise manifests within the channel, but that the channel cannot exist without noise. This destabilises the notion that noise is an unwanted aspect of communication, a position adopted when viewing noise as an external force acting upon an otherwise perfect communication. If noise is medial then noise is essential to the process of communication. This is a shift in the ontology of communication as understood thus far and disrupts the notion that the *telos* of communication is communication *qua* transfer. Essentially, noise—or the unveiling of

something as noise—is an inherent structural aspect of communication. Indeed, arguably, the system is to a large extent governed by the nature of that which corrupts it.

This way of thinking about noise in Serres sits alongside the notion that noise is a form of rupture, as discussed previously. Whilst this may seem to be a contradiction—noise cannot be external *and* inherently internal—one could overcome this by distinguishing between noise *qua* noise and a noise. If one were to think along these lines then it would be possible to posit noise as rupture as being a noise—which is to say a particular manifestation of noise in the world—and medial noise as noise *qua* noise. This would allow noise to exist as both external and internal to communication.

Attali also discusses the role of noise as medial in the opening of *Noise*:

Our science has always desired to monitor, measure, abstract, and castrate meaning, forgetting that life is full of noise and that death alone is silent: work noise, noise of man, and noise of beast. Noise brought, sold, or prohibited. Nothing essential happens in the absence of noise. (Attali, 1985 [1977], 3)

Attali asserts that life is full of noise; there is—in life, at least—nothing without it. It seems from the outset that Attali is all too aware of noise in the background: ‘life is full of noise and death alone is silent’. To posit that noise is a constant on top of which one lives one’s life situates it as background, and to suggest that death is silent situates noise as something inherently unknowable. This understanding of noise is comparable to the structure of the atom in figure 1.3 in which being (life/noise in this example) is framed by void (silence/death).

For Douglas Kahn, noise is a site of tension located at a crossing point, or ‘that constant grating between the abstract and empirical’ (Kahn, 2001 [1999], 25). Noise becomes an event within the communication process itself. Whilst other models posit noise as an attack upon the process, Kahn’s noise comes from within. This means that noise cannot be considered an event in the same way as in the thinking of Goodman, for example. As in the writing of Crocker and Serres, Kahn’s theory is not concerned with what, but *where* noise is: noise is situated as coming from within the communication itself. In figure 1.12 noise occurs in the space between sender (abstract) and receiver (empirical). This space is very similar to the spaces found in Goodman’s and Serres’s noise, not to mention that of Shannon. However, the way in which the information is changed is somewhat different. Kahn uses handwriting as an example of this process at work:

‘A silent figure of significant noise exists in handwriting [...] between pure legibility and an entirely illegible scrawl there lies a great deal of variability. Significant noise cannot be disentangled from the specifics of such variability’ (*Ibid*, 26).

The information here is moved from the mind of the writer (abstract space) onto the page (the channel) and into the mind of the reader (empirical space). During this process the information will become corrupted in some way. This could be through the writer’s inability to express something through a lack of vocabulary or through something simpler, such as an ink smudge. In this example the ‘site’ of noise would be the body. The channel is dynamic here, as the process actually involves the traversing of several micro-channels. The most important aspect of this transfer, however, is that the receiver is fully aware that this corruption has taken place and therefore endeavours to filter out the alterations to the message.

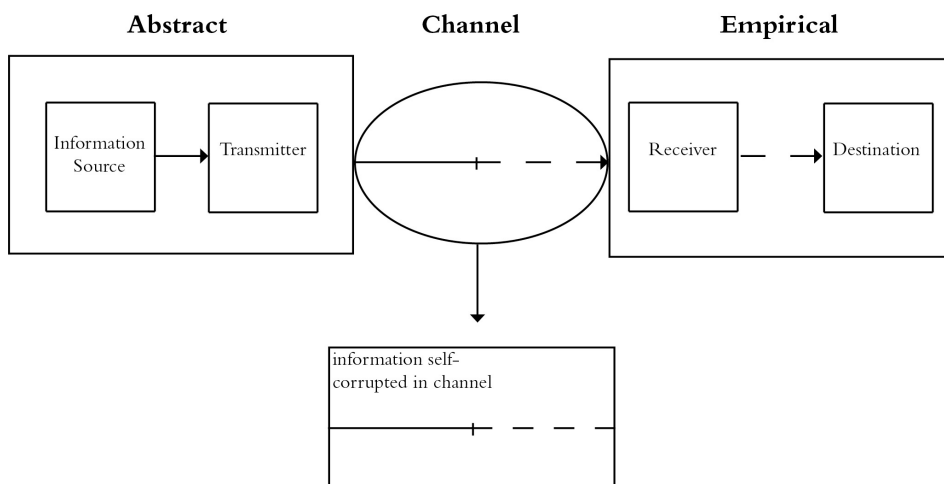


Figure 1.12: Kahn’s noise as mediativity (abstract vs. empirical)

This process is a form of mediation, abstraction, or noise reduction: ‘As a precautionary measure, such local impurities [of speech] are subsumed under a communication presumed to be successful, even if many important details and larger associations are lost in the process’ (*Ibid*, 25).

Whilst the process does not suffer as a result, the space in which the corruption occurs—which is to say, the channel—becomes the site of noise. This is a more fully ontological interpretation of noise since noise becomes manifest in a space that is not solid, and is defined by the process around which it is formed. The process becomes further complicated when one attempts to communicate noise as an abstract idea, which is to say in, for example, Noise Music. The noise from normal communication—the process of filtering sound—starts to work backwards. If noise is being transmitted, then noise itself becomes part of noise reduction. Kahn explains this thus: ‘Noise is an abstraction of sound, and if the “process of abstraction

... is involved in the elimination of noise,” then noise is itself a form of noise reduction’ (*Ibid*). Noise is situated in the channel, a space that is defined by that which surrounds it; noise is defined here by the ‘how’, rather than the ‘what’. Noise is the exposure of something that has always been part of being though the creation of a noise event, and is therefore ontological in this case.

Kahn’s interpretation is very closely aligned with the thinking of Serres to the extent that noise exists within the channel, though Serres posits noise as a kind of rupture in information, suggesting a kind of fragmentation or violent act. Kahn’s discussion of the deliberate transmission of ‘noise’ is also interesting as it further destabilises the notion that noise is an unwanted thing, specifically in relation to art.

1.8 Noise as multiple

The notion that noise can be explained in terms that can lead to some kind of ontological ‘truth statement’ is problematic. As with Badiou’s notion of the one, noise when viewed through the literature discussed here can only be understood as inherently multiple. The various models proposed by the authors in the literature review are all, to some extent, examples of noise. These examples are nuanced and complex; they also posit noise as an event in a similar way to Badiou. It is not the place of any writer or thinker to propose a ‘grand plan’ for noise; the very nature of Badiou’s ontology rests on the fact that being—and therefore truth—is unknowable. Any attempt to try and provide a definitive answer to the question ‘what is noise’ would undermine the framework on which the project is constructed, as it would suggest that noise (being) is knowable. I will attempt however to present my own reading of what noise is in light of the material covered.

1.8.1 noise is not a noise: empirical articulations and social paradigms

Now that the three models of noise have been explored within the context of the current literature, I will return to the distinction between a noise and noise *qua* noise. First, it must be assumed a noise, which is to say, what many would simply call noise—be it sonic, visual, or social—is already necessarily a constituent part of being. By extension, one can assert that all empirical articulations have the potential to be viewed as noise.²⁹ These empirical articulations are related to each other through the notion of pure multiplicity as mentioned earlier in this chapter. Second,

²⁹ Empirical articulations are cognitive stimuli that are understood to be occurring in the ‘real world’. See p. 20.

social paradigms are constructed in the same way as empirical articulations. By this I mean that paradigms exist as pure multiplicity in the same manner as empirical articulations. Because the paradigms are constructed in the same way as the articulations, they are able to interact in the same way. This means that a social paradigm for a conversation is, for example, related to the social paradigm for a musical performance. This connection could be predicated on the fact that in both a conversation—or part of it, at least—and a musical performance, one party listens whilst the other makes sound.

In addition to paradigms interacting with paradigms, and articulations interacting with articulations, paradigms and articulations interact with each other. As with paradigms and articulations in isolation, the mixing of the two is due to their construction within being and being's relationship with pure multiplicity. In short, this means that, at some point, every paradigm meets every articulation. A noise, therefore, manifests when the being of a particular social paradigm crosses the being of an articulation and they do not find each other acceptable. At this point there is a rupture of the two lines of being and an event occurs as demonstrated in the diagrams below. In the figures, solid lines show a crossing of nodes between lines of empirical articulation and social paradigm, and the dashed line represents a new line manifesting as a form of event, labelled as a manifestation of noise:

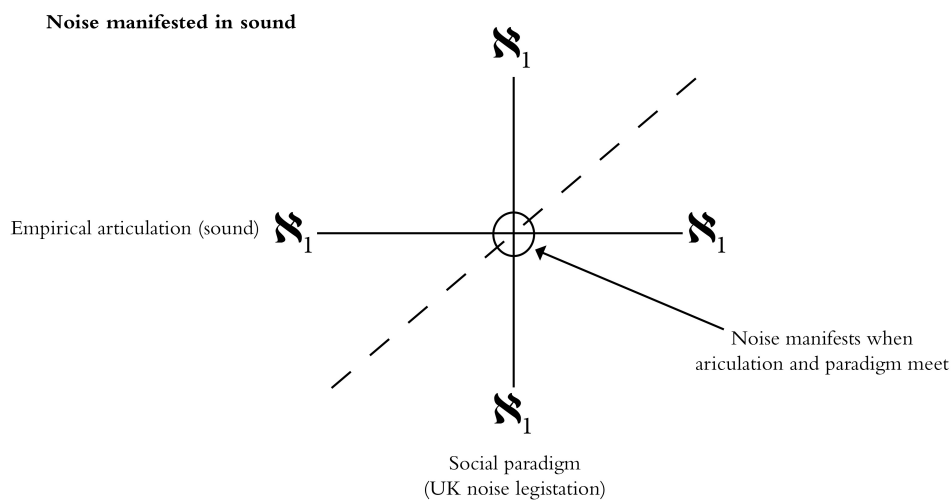


Figure 1.13: noise manifested in sound

This model uses ‘the sonic’ as the articulation and does, to a large extent, explain what happens when a sound is heard that is noisy. This model, however, can also be applied to other articulations, such as writing:

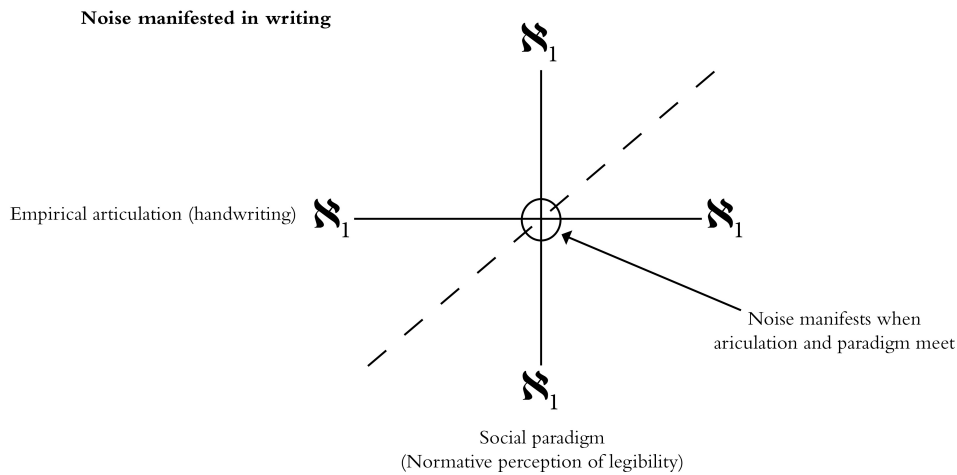


Figure 1.14: noise manifested in writing

Here, the model is exactly the same and only the values of each line have been changed. What is mapped here is a change to being that is accepted as truth. The model, therefore, is not a model of noise, but rather a model of a potential event. This is only an event, however, in terms of the hierarchy in which the being of the social paradigm exists, which is to say that what may seem to be an event at the time could, over a longer period, show itself to be otherwise. The being of the social paradigm is a knowable (consistent) multiple and exists on a level of being that is lower than that which is truly ontological. In Badiouian terms, Paul's conversion on the road to Damascus is a 'true event' as it changed the world on a level that the sound of a bomb or siren does not. If a noise takes the form of an event within different crossings, then it can be concluded that all events are, to some degree, noisy. This is also a humanly knowable construct and is, one might argue, an example of episto-ontological noise, a noise in being rather than noise *qua* noise. A siren may be seen in many contexts as being noisy: it distracts people from what they are doing. However, within the paradigm of a medical emergency, the purpose of the sound made by the siren is the preservation of life. It is certainly true that some sounds or other empirical articulations are more prone to being labelled as a noise, though this does not make them noise *qua* noise.

The shape of the model proposed by Shannon is, in many ways, similar to my formulation(s) of how noise may exist: Shannon's model demonstrates the crossing of two lines. Shannon's model, however, shows both lines with an origin and a destination: sender to receiver, and noise source to channel. Shannon has mapped noise, though through his framing has attempted to represent a whole rather than a part, a mountain instead of a plateau. In my model the lines do not have ends, they

are crossings, and the concept of ‘content’ is somewhat more abstract. The crossing point on this model is similar to the interruption of the rats in Serres. Like Serres’s parasite, the host (paradigm) can either adapt to the interruption (articulation) or reject the change, which is to say, identify that interruption as noise. If the paradigm adapts to accommodate the articulation—when a person accepts the sound of a drill in the background of their conversation and ignores it, for example—then noise ceases to manifest. If the host rejects the parasite, then the manifestation continues to be and is identified as a noise. In this case the parasite is only identified as a noise on a single level: there may be another event—in fact, there must be an infinite number of other events—on this line of articulation where it meets with a social paradigm. It may be that in this paradigm, the parameters are such that the articulation *is* accepted and therefore an articulation is noisy at some points and not at others. If this is the case then there are an infinite number of crossings between a single paradigm and articulation that are identified as a noise and not a noise, showing that noise *qua* noise is not something that is singular—or binary—but, rather, multiple.

1.9 noise vs. Noise II: my noise music

Now that I have outlined the three models of noise as investigated in the literature review, I am able to return to the concept of practice. Whilst some of my practice may be understood to be Noise Music, I am principally concerned with the way in which noise can be manifested through the integration and manifestation of the three noise models in a practical setting. The focus on the implementation of models rather than on a harsh sonic result allows me to create a different kind of noise music, not least one that is often very quiet. This is not to say that my music is not able to occupy the same space as Noise Music. Indeed *Synaesthetics*, a piece for tape that is part of the second stage of the portfolio fulfils almost all of the characteristics one might expect of a piece of Noise Music. However, it is the way in which it occupies that space—and its interaction with other noise models—that makes it an important addition to the portfolio. My approach to writing music that is noisy—as opposed to Noisy—is representative of deeply engrained methodology that guides the development of the entire project. It is through the conscious interaction between the creation of practice, and subsequent reflection and reframing of the written research, that my project revolves.

2. Proof-of concept works: noise models in the singular

2.1 Noise and the singular

As outlined in the methodology, the creation of music is an integral aspect of my research model. Much like empirical data gathering and field work in ‘traditional’ doctoral projects, the works are themselves case studies that look at the ideas outlined in the initial literature review and analysis. Critical commentaries are used to reflect on the outcomes of the pieces and the ways in which they go towards answering some of the questions posed. They also reveal new questions and re-frame questions that have already been asked. To this end, both the works and the commentaries are essential tools in the progress of the research.

Singularity is an issue that has already been discussed at length in the previous chapter. In short: being is not singular; it is only reducible to a pure multiplicity, which is to say a multiplicity that is inconsistent, or uncountably infinite. Whilst noise is often understood to be singular—something is either noisy or it is not—none of the models drawn from the theory surrounding discussions of Noise Music given in the literature review defines noise in such terms. In all cases, the model of noise which is shown is one in which the noise instantiates *elsewhere*; it is really a formal characteristic, a relation. In this sense, all of the theories show that noise need not be concerned with the noisy in the dictionary sense. Indeed, Noise Music in the way in which it is figured here need not be noisy at all. This proposition is absolutely fundamental to my research, and is something I will return to several times in what follows in this chapter. The fundamental claim that I make, then, is that noise, as modelled by theorists of noise, does not implicitly—even if it might *explicitly*—*sound* noisy, even (and perhaps especially) if those theories use music that *does* in order to make their points. Neither, it should be added, is it necessarily either ‘loud’ or ‘unpleasant’. The noise of the pieces I outline below instantiates itself elsewhere, while still remaining ‘true’ to the models of noise outlined in the literature review. The two pieces discussed here serve as a proof-of-concept for later works, which is to say that their purpose is to demonstrate the possibility that the models can be applied in a musical setting. By dealing with noise models in a singular manner, I intend to demonstrate their existence within the framework set out in the previous chapter.

2.2 *After Holmdel*: noise as fragmentation

After Holmdel implements, in its treatment of musical material, the model of noise as fragmentation, and is a practical application of Jacques Attali's proposition that noise is an act of fracture, which is to say '[n]oise is violence, it disturbs. To make noise is to interrupt a transmission, to disconnect, to kill' (Attali, 1985 [1977], 26).

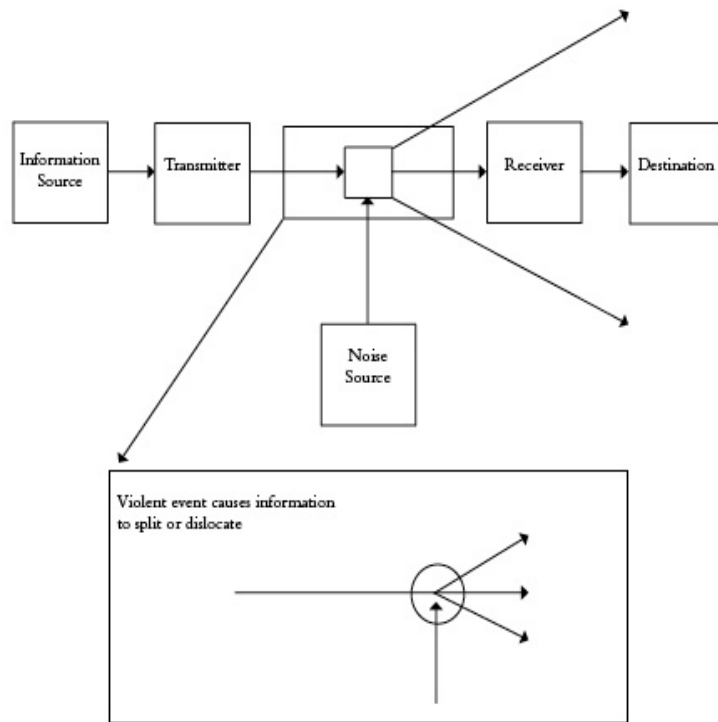


Figure 2.1: Attali's noise as blocking

In figure 2.1, the 'pure message' is fractured into parts by an external source—the 'noise source' in the diagrammatic representation of Attali's theory, above—leaving the receiver with little of the original information, and also no idea of how that extra information may have related to what they now have. This process is applied in *After Holmdel* as follows: the fracture is situated in the breaking-up of the pure message—in this case, processed material created through the sieving of pitch and rhythm—and the subsequent distribution of this material within the piece, both horizontally—temporally over its duration—and vertically across the various instruments of the ensemble. Take, for example, the durational process that occurs in the oboe from bar 8, which represents one of numerous 'pure messages' presented in full:



Figure 2.2: rhythmic material from *After Holmdel* oboe line: the ‘pure message’

This is one of several durational processes in the wind instruments, which exists alongside other strands of ‘pure message’ within the strings, brass, and percussion. The description of the oboe line here, then, provides just one possible route through the piece. The first and most basic form of fragmentation of the oboe process—a timbral fragmentation—occurs at bar 33 when a section of the pure message appears in the violin:



Figure 2.3: *After Holmdel* violin b. 33: timbral fragmentation

At this point, only very small amounts of fragmentation occur within the four wind instruments. The fragmentation at bar 33 is not only a timbral shift to a different instrumental family, but also the inclusion of the final quaver of the process appears at the start of the fragment, causing the rhythm to be re-spelled in its new form. In terms of the diagram the ‘pure message’ is fractured by noise, and only a section of that message remains.

This fragment continues to permeate the violin line until bar 54 (first bar of figure 2.4). At this point, the fragment occurs not only in the violin, but also in the electric guitar (bar 57). In addition to this movement among different string instruments, multiple variations of the same fragment appear, for example, in the splitting of the triplet quavers (violin, bar 54) and the inclusion of the triplet in full (electric guitar, bar 57). This is a more complex form of fragmentation representing the crossing of simultaneous fracture processes. When the process occurs simultaneously, fragments are placed together thus creating new lines:



Figure 2.4: *After Holmdel* violin and electric guitar b. 54ff

By bar 60, the process of fragmentation has been further complicated. Fragments of the oboe line are present in the viola and cello, but are now enveloped by other fragments:



Figure 2.5: *After Holmdel* viola and cello b. 60ff

Looking back to figure 2.1, simultaneous instantiations of Attali's process have caused new lines to be created (figure 2.4), and these have now experienced their own fracture, creating a new generation of fragmented lines. Though the content of the pure message remains the same, the context in which that information appears has been drastically altered. For example, the cello fragment—from the original oboe line—in bars 61–62, and the viola fragment at the end of bar 62, are preceded by the semiquaver triplets—from the saxophone—that were present in bars 56–57.

The fragmentation of lines is intended as a disruption of hierarchy: the relationships drawn between certain pitches and rhythms are undermined by their movement. Not only is there a corruption of the pure message through the movement of individual fragments, but also by the formation of new 'fragment lines', which undergo a second process of fragmentation. Fragmentary elements promise meaning through the allusion to a traditional application of motif, however, the multiple levels of fragmentation deny the possibility of any realisation of that meaning. The process implies motif as a signposting device, but the path of fragmentation is constantly changed, undermining this experience. In this sense, the fragments may function not as motif, but as a kind of anti-motif, alluding to, but failing to deliver, meaning. In addition to the implicit promise of meaning through motif, the form of the piece alludes to 'tradition', in the sense that it is rigorously structured into sections of nineteen bars.¹

¹ Excepting the beginning, which forms a kind of 'head' for the piece.

Figure 2.6: *After Holmdel* bb. 8-13

At bar 8, one can clearly see the textural distinction between the processed material in the wind and the sustained notes in the strings. Over the following thirty-eight bars, small fragments of processed material start to permeate the sustained string notes, and by bar 46 there is a major textural shift:

Figure 2.7: *After Holmdel* bb. 46-52

Whereas previously the two textures had been largely distinct in instrumental terms, figure 2.7 shows a more homogeneous texture, with sustained notes in the oboe, bass clarinet, and alto saxophone, as well as processed material in all string instru-

ments. During the next section, the texture starts to invert and, by bar 59 (figure 2.8), the textural landscape of the piece has reversed with processed material in the strings and held notes in the wind:

Figure 2.8: *After Holmdel* bb. 59-64

From bar 61, the final section of the piece shows a complete breakdown of any textural structure, returning to the homogeneous form as seen in figure 2.7. This breakdown—unlike the previous one—is not part of a journey toward an inverted texture, but is rather a completion of the fragmentation that has been occurring both horizontally—the fragmentation of the pure message—and vertically—the fragmentation of texture/timbre—across the piece as a whole. As with the use of motif, the form of the piece appears to reveal meaning but consistently fails to deliver it. The application of noise as fragmentation as in the model is once again revealed; the pure message—‘meaning’—appears to exist, but this is really only a fragment, a simulacrum.

In addition to the ideas drawn from Attali’s theory is a secondary, extra-musical model: the Cosmic Microwave Background Radiation (CMBR), which is a residual radiation from the beginnings of the universe that exists in the form of inconsistent patches of radiation in space.² The CMBR is not applied explicitly to the piece as is the case with Attali’s model, but serves, rather, as a backdrop for the piece in general; a cosmic version of Attali’s theory. The nature of this incon-

² The use of a secondary influence is a necessary part of both *After Holmdel* and *Dualities*, the second piece in this section of the project. As these pieces deal with noise models in isolation, the secondary influence creates something for the noise model to react with. In later pieces, the secondary influence is dropped, as models are able to interact with each other.

sistent—or fractured—state is responsible for the possibility of the universe consisting of matter rather than being merely a thin, soup-like substance.³ To this end, meaning as generally understood—the identification of relationships and their placement into hierarchical patterns—is not really meaning, rather multiplicity to which ‘meaning’ has been ascribed. It is normal, or at least normative, therefore, to make meaning out of non-meaning. Noise as fracture according to Attali is the destruction of the ‘pure message’, but this fractured message is still viewed with its own meaning. Knowledge consists of fragments to which meaning is ascribed and, while the fracture of lines appears at first to be destructive, the place of fragmentation within the shape of the piece as a whole—the creation of order *through* fragmentation—is *constructive* to the extent that all information is essentially fragmentary. Serres states that noise ‘through its presence and absence, [and] the intermittence of the signal, produces the new system’ (Serres, 2007 [1980], 52). This suggests that whilst violence is done to the line and to the textural shape of the piece on a vertical level, it need not sound violent in terms of linear form. In addition to this, the timbre and dynamic of the piece are somewhat less violent, often being muted or using breath tones. Although the piece is directly modelled on a construction of noise, it is not Noise Music in the ‘traditional’ sense. Rather, it is music about noise. Noise can exist as violent fracture within the piece, but this fracture is not necessarily destructive.

2.3 *Dualities: noise as overcoming*

Dualities explores the model of noise as overcoming by presenting the performers with material that is physically challenging—an overcoming of the body. The secondary influence utilised in *Dualities* is the concept of wave/particle duality, a sub-discipline of quantum mechanics, which suggests that matter, in addition to being constructed from particles, also uses waves to transfer energy. This is in essence a paradox as it suggests that matter is not fixed in the simplistic sense, but rather exists in multiple states.⁴ Theoretically speaking, both *Dualities* and Noise Music can be understood as a kind of overcoming, as mapped in figures 2.9 and 2.10 taken from the first chapter of this project.

³ See George Smoot, ‘The Cosmic Microwave Background Radiation’, *Smoot Group Cosmology: Lawrence Berkeley National Laboratory* <<http://aether.lbl.gov/www/science/cmb.html>> [Accessed 06/03/14].

⁴ See Walter Greiner, *Quantum Mechanics: An Introduction* (London: Springer, 2001).

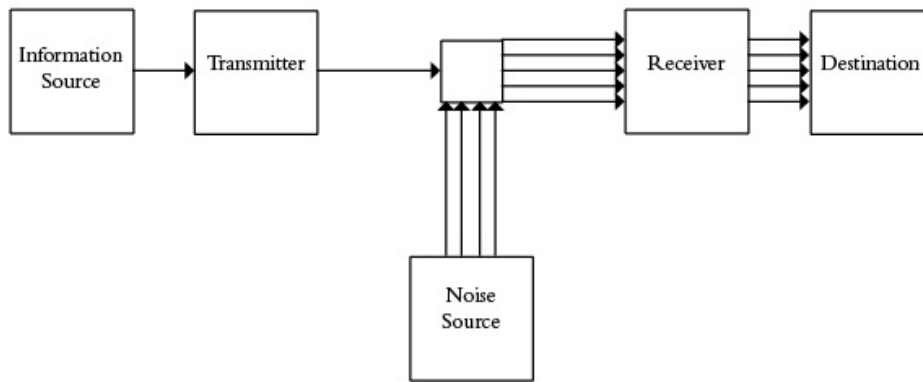


Figure 2.9: Goodman's noise as overcoming

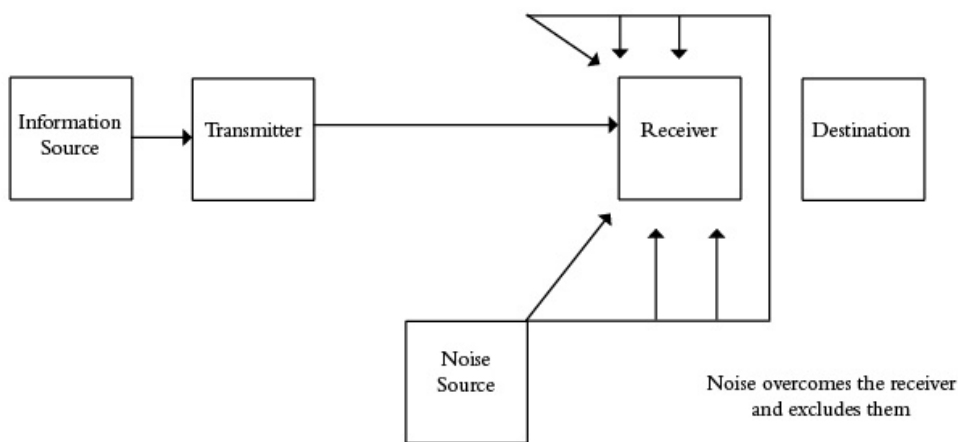


Figure 2.10: Voegelin's noise as overcoming

Both of these models show noise overcoming the receiver with an excess of information. Noise as overcoming, as outlined by Voegelin, can be applied to Noise Music to the extent that the music's complexity on the micro level is intended to leave the listener unable to fully explore any macro-structural elements of the piece. Hegarty also explores this issue when he compares Merzbow's music to Kurt Schwitters's *Merzbau*, noting that 'Merzbow's music does some of the same work as Schwitters, making a form that is so complex it becomes formless' (Hegarty, 2007, 156).⁵ In addition to an overcoming through sheer volume of data, Voegelin's model shows noise not only presenting the receiver with extra information, but also literally cutting them off from the process of communication. This model can also be applied to noise music to the extent that '[n]oise does not demand my attention but grasps it literally to the exclusion of all other sensorial possibilities' (Voegelin,

⁵ Kurt Schwitters (1887-1948) was a German painter. His collages or 'merz pictures' are the inspiration for Masami Akita's stage name Merzbow. See 'Kurt Schwitters Archiv und Werkverzeichnis Kurt Schwitters', *Sprengel Museum Hanover* <http://sprengel-museum.de/kurt_schwitters_archiv/index.htm> [Accessed 01/02/14].

2010, 47). The same is true of *Dualities*, though the sensorial exclusion is concerned with the performer. Whilst in Noise Music the receiver is perceived to be the listener, in *Dualities* the receiver is the performer. This overcoming of the performer can be seen on two levels:

- The performer is presented with an excess of information. This takes the form of a score that takes a parametric view of aspects to performance such as bow position, bow direction, finger positioning and pressure;
- All of these specific actions are also very physically demanding on the performer.

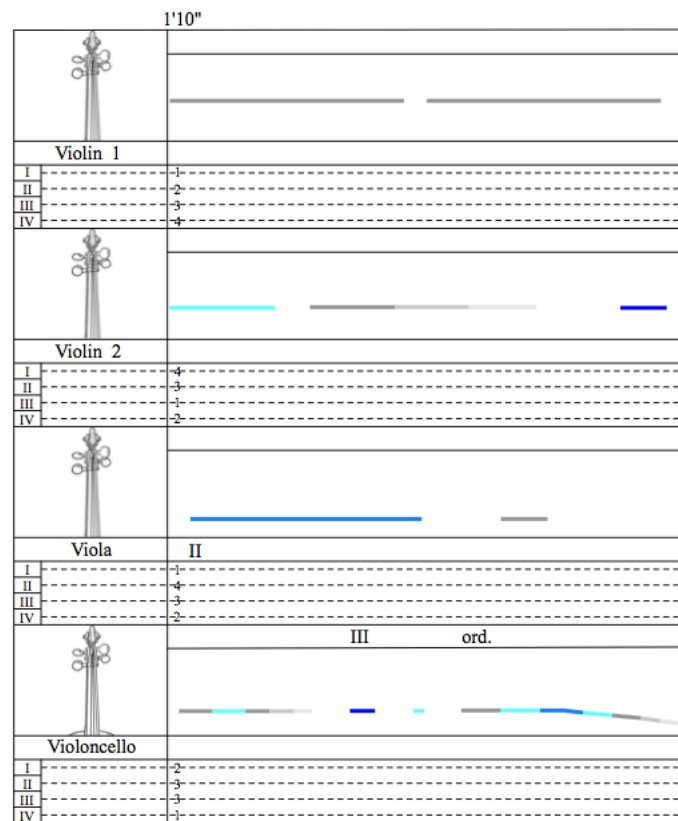


Figure 2.11: *Dualities*: from 1'10''

In figure 2.11 it is apparent that each performer has her own challenges to overcome. The first violin is asked to play two gestures of about twenty-five seconds each with a five-second pause afterward. This is done whilst maintaining a 'very light' level of bow pressure and moving the bow smoothly across the four strings at a very slow speed. With her left hand she is also expected to keep her fingers in the position indicated by the tablature, which is, in itself, quite uncomfortable. The other performers have their own issues to deal with, including minute changes in

kind of overcoming can be read in the context of Brian Ferneyhough's writing on the performer and transcendence. He states that 'what interests me is encouraging the performers, in any given composition, to come to terms with their own natural limits, and thereby transcend them' (Ferneyhough, 1995, 233). In performances of Ferneyhough's music, this pushing and transcending of limits often results in a performer appearing almost calm as they present extremely complex material. This calmness is also present in the video recording of *Dualities* included with the portfolio.⁶ It is worth noting, however, that the video recording is the first and only take of the session as the performers stated both before and after playing that they would only be able to produce the piece in its entirety once.

This incongruence has resonance with some of the findings in *After Holmdel*. While *After Holmdel* claims that violent noise need not sound violent, *Dualities* proposes that overwhelming noise need not *sound* overwhelming. In fact, overwhelming noise need not sound at all. Noise here can be seen to manifest in the body of the performer through the piece's use of notation. There is a more general theme that can be drawn from the two pieces presented here. Though the project is concerned with the writing of music, and thus, inevitably, with the creation of sound, noise is manifested in the extra-sonic characteristics of the pieces. This is something that is absolutely fundamental to the project as a whole and is the most important outcome of the practice in the proof-of-concept stage.

2.4 Conclusions

The pieces created in this stage of the project take single noise-models as their starting points. Now that empirical records of the noise models exist, the next step is to apply multiple noise-models simultaneously. It is apparent in *After Holmdel* that the application of noise as fracture is embedded within the formal process of the piece and also—as is the case with *Dualities*—on a more abstract level. The application of models continues on an abstract level for the rest of the project, but there are also applications of models on a more literal, algorithmic level. The mixture of models is not just a natural progression to the use of noise models in isolation. Rather, the mixing of models determines *how* the models react with each other, therefore potentially revealing new features. In addition to this overarching development of

⁶ The act of transcending limits in this way is not limited to musical practice. Carolee Schneeman's *Up to and Including Her Limits* (1973-76) is a piece of visual art in which Schneeman is suspended in a tree surgeon's harness for an extended period of time whilst drawing with crayons on the surrounding walls. See 'Up to and Including Her Limits 1973-76', *Carolee Schneeman* <<http://www.caroleeschneemann.com/uptoandinclusing.html>> [Accessed 29/01/14].

model application, there have also been smaller, more practical developments during the first stage of the portfolio. The application of single noise models also highlights the way in which noise interacts with the pure message. In the next stage of the project, the pure message continues to play a central role and is subjected to noise on multiple levels.

Parametric notation is an issue that has come to the fore during this stage. Parameter, as it was conceived in the multiple serialism of, say, Boulez or Stockhausen was to do with treating the individual elements of sound—pitch, duration, amplitude, and overtone characteristics—as if they were independent. In much recent European music, such as that of Claus-Steffen Mahnkopf or Klaus K. Hübler, the body of the performer has been treated parametrically with, for instance, the left and right hands of a string player notated independently of one another. In these musics, though, this is typically allied with a reliance on ‘complex’ forms of notation, derived from the sorts of serial models found in early Boulez or Stockhausen. Hübler discusses this decoupling, stating that ‘[i]n classical performance technique, the shift of the bow from one string to another was always combined with a horizontal movement of the bow. However, this string-change can be treated as an independent action’ (Hübler, 2002, 235). Hübler not only treats the concepts of rhythm and pitch as parametric, but extends this parametric treatment to the performer and the instrument, in this case the bow and the string. This can be seen in figure 2.14, taken from his Third String Quartet:

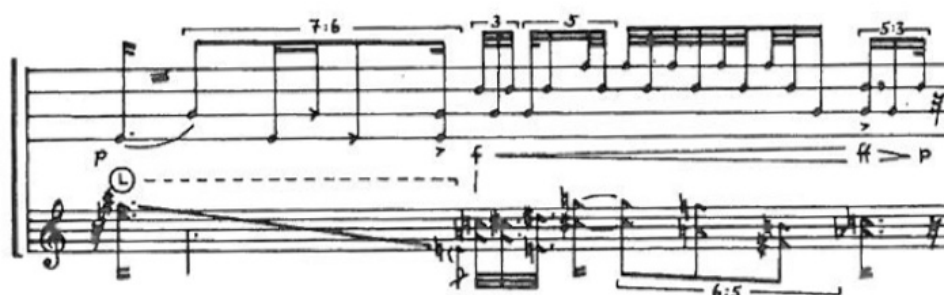


Figure 2.13: parametric decoupling of pitch and rhythm of bow and string in Klaus K Hübler’s Third String Quartet

My own method allies itself such an approach to decoupling with an approach to time closer to the models of Alvin Lucier and John Cage. This is, not least, because I generally take the point that many composers of fixed media—such as Jonty Harrison—make, that timbre is not, typically, dissociable from those other parametric elements. Harrison, in his article ‘Sound, space, sculpture: some thoughts on the

“what” “how” and “why” of sound diffusion’, outlines this issue in relation to organic and architectonic structure. He notes that

[t]he high modernist agenda of serialism (of which *elektronische Musik* was, interestingly, a part) was heir to this tradition and continued the prevailing view that the ‘text’ of the score, amenable to ‘out of time’ analysis, was the ‘true’ representation of the composer’s thoughts because it allowed for more accurate measurement of the distances between musical events. These distances may be expressed as ‘intervals’ of pitch (frequency), ‘durations’ of rhythm (time) and ‘levels’ of dynamic (amplitude). To these, the nineteenth and, particularly, twentieth centuries progressively added (fixed, instrumental) timbre, types of attacks and articulation and all the other parameters which integral serialism sought to control [...] This seems to be evidence of what I call ‘architectonic structure’ and is diametrically opposed to the ‘organic structure’ generated by the materials and compositional strategies of *musique concrète* [*sic*]. (Harrison, 1998, 119)

For Harrison, however, this architectonic (serialist) approach to structure does not work within his own approach to sound diffusion:

Sound material approached as organic matter to be sculpted, shaped, coaxed, caressed into participating in a piece of ‘sonic art’ generally (and I stress the generalisation) behaves well in diffusion (when properly done, of course), because diffusion is an extension of the compositional approach [...] the problems of diffusion arise with musics which spring from a different tradition (where predetermination in one of its many guises is involved), because to be able to predetermine, you have to be able to ‘measure’, to ‘notate’ (in some way). Inevitably, it seems, this leads back to structures and musical arguments built on the traditional ‘parametric’ approach, where ‘meaning’ in a work is defined by values in pitch, rhythm and dynamic and the measurable distances between those values. (*Ibid*, 124–25)

In this sense, my interest is in a very particular fusion. In those highly complex parametric musics, an element of chance necessarily instantiates: the timbral results of complexes of serial and physical parameters cannot be fully predicted. Given that my interest is in a precise examination of points of noise, however, ‘chance’ outcomes become unhelpful. The fusion of an approach to time broadly drawn from an American experimental tradition with both a certain sort of *musique concrète* aesthetic—best exemplified through Lachenmann’s idea of *musique concrète instrumentale*—and the very particular decoupling of physical characteristics seems to me, at present, to be the most clear and compelling way in which to construct a frame for examining ‘noise’ as a concept.

3. Noise as multiple: mixed-model works

3.1 Introduction

The first two pieces in the portfolio—*After Holmdel* and *Dualities*—deal with the implementation of individual noise models—fragmentation and overcoming—only. In addition to acting as proof-of-concept works, these early pieces revealed something about the nature of the original research question; namely the idea that it is not *what* noise is, but rather *how* it is that is important. In the early stages of this project, it was suggested that noise in the literature could be divided into three distinct noise models: noise as overcoming, fragmentation, and mediality. However, these three models can be further refined into two broader models: noise as an external event, and noise as mediality. Of course, this distinction is rather blunt and there is evidence of interaction between these two categories. In addition to serving as proof-of-concept works—demonstrating the possibility of implementing theoretical models in a practical setting—the pieces also aid in refining the broader research questions. The works included in the first part of the portfolio deal only with noise as an external event.¹ Mediality as concept—as discussed in reference to Crocker, Serres, and Kahn in chapter one—is inherently relational and the difficulty encountered when attempting to include it in the first part of the portfolio suggests that it is far more complicated than the other noise models discussed in this project. This is an issue that will be discussed in greater depth later in the thesis.

3.2 Mixed models

The pieces that form the second part of this project can be split into three broad categories. The first set mixes the three noise models in combination to see if, first, any more models present themselves, and, second, if the models can be successfully implemented in this regimented fashion. At the end of this process, all three models are brought together in the work *Everyone Else But You*. The combination of models outlined above, in addition to the singular use of models as utilised by pieces in the previous chapter, can be outlined thus:

¹ *Angular Frequencies*, an acousmatic piece that deals with noise as mediality through handwriting was developed, though not to the point of completion and is therefore not included in the final portfolio. The issue with the piece is not, I think, down to its musical merits, but rather that it was problematic on a technical—and, to some extent, theoretical—level.

Name	Overcoming	Fragmentation	Mediality
<i>After Holmdel</i>	No	Yes	No
<i>Dualities</i>	Yes	No	No
<i>Angular Frequencies</i> ²	No	No	Yes
<i>The Totality of Number</i>	Yes	No	Yes
<i>sur votre mortifiante ensemble, imaginaire, symbolique et Le théâtre</i>	Yes	Yes	No
<i>Synaesthetics</i>	No	Yes	Yes
<i>Everyone else but you</i>	Yes	Yes	Yes

Table 1: application of models to pieces

This mixing of models is comprehensive—in that seven possible permutations of them are explored in seven pieces—and should elucidate the best possible information about the nature of their combination. In addition to an exploration of models in combination, the notion of the pure message is an important issue that will be discussed throughout this section of the project. To this end, the form of the pieces, and the ways in which the models are executed becomes an important aspect of my analysis. The visibility of the pure message to the different parties engaged in the piece is a central issue here: the lack of knowledge on the part of the performer—in *sur votre mortifiante ensemble, imaginaire, symbolique et Le théâtre*, for example—can, in some circumstances, enhance the ‘noisiness’ of the piece’s form. In addition to this—and specifically with regard to *Everyone Else But You*—the ‘hidden in plain sight’ approach to the pure message takes formal noisiness to a higher level still. The second and third sets move on from this model-based approach and will be dealt with later in this chapter.

Rather than discussing each piece in turn, it seems more pertinent to look at the way in which each model develops over the course of this stage of the project. This approach will allow for a focused discussion about the development of noise in the research, rather than a simplistic development of each piece. Before this, however, I will provide a brief overview of the four pieces in this section.

3.2.1 Overview of works

3.2.1.1 *The Totality of Number*

The Totality of Number, is concerned with the combination of the noise models of overcoming and mediality. The concept of noise as overcoming was previously ex-

² Not included in final portfolio (see appendix).

plored in the string quartet *Dualities* within the first stage of the project. In the context of *Dualities*, overcoming was implemented in the form of a physical challenge for the performer. In *The Totality of Number*, overcoming is implemented on a psychological level through the use of parametric notation. Noise as mediality is applied through the refinement of the parametric notation, creating a notation system that is simultaneously overwhelming and ergonomic.

The base material is taken from an online random number generator, which purports to provide a ‘true random number service’.³ The creator of this generator notes that the parameters for generation are taken from ‘background noise’, including time-codes, and other information from the user’s computer that will be unique to the moment of generation. The random number generator was used to create parameters for a string generator, which then provided raw data in the form of three-number-clusters (an integer and two decimal places). This information was then laid out in a graph.

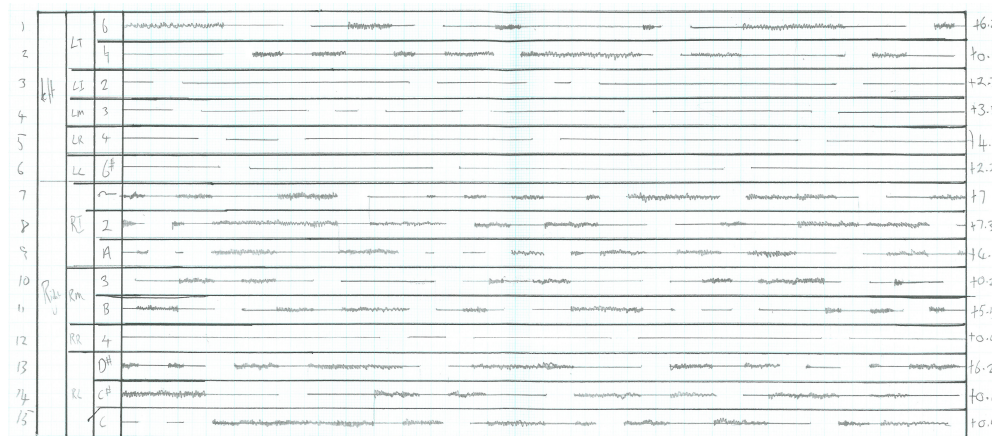


Figure 3.1: pre-compositional pitch sieving for *The Totality of Number*

Figure 3.1—set out over a thirty-second period per page—was then edited to allow for the fact that multiple keys are depressed by the same finger (the groupings can be seen on the left side of the graph). This editing process allowed for the transition of material from randomly generated numbers to physically realisable gestures. This resulted in a new set of material as seen in figure 3.2.

³ For more information see <http://www.random.org> [Accessed 08/02/12].

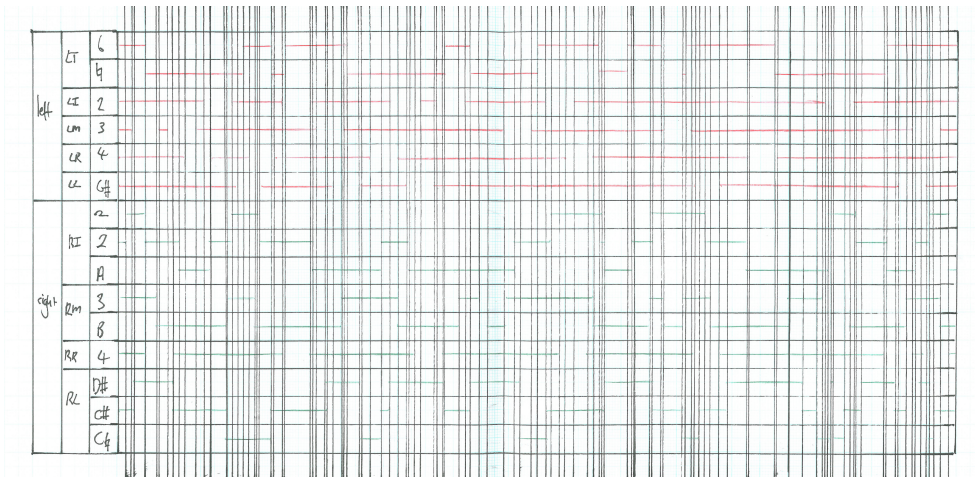


Figure 3.2: creation of mechanical gestures for *The Totality of Number*

Here, the lines are broken and create linear movement within their finger groupings. This represents a development of material that has now gone through a single process of corruption. The vertical lines were then added wherever the vertical information changed creating a series of gestures. The score was then developed around these gestures, transposing the graphic material into something approaching mensural notation. The final notation (figure 3.3) is a product of all of these developments and presents a compromise between the graphic and mensural systems:

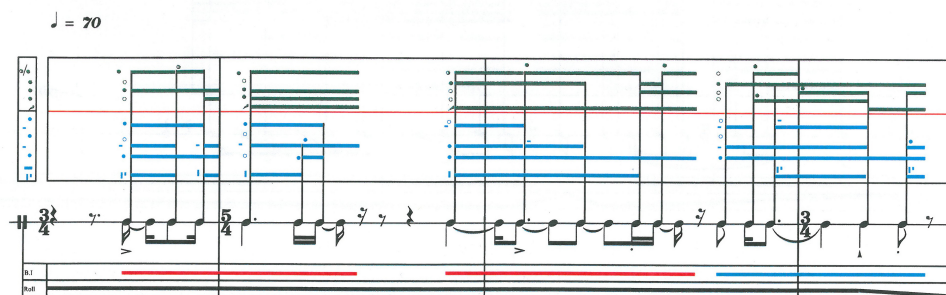


Figure 3.3: *The Totality of Number*: opening

3.2.1.2 *Sur votre mortifiante ensemble, imaginaire, symbolique et Le théâtre*

Following *The Totality of Number*, *Sur votre mortifiante ensemble, imaginaire, symbolique et Le théâtre*, for trombone quartet looks specifically at the combination of fragmentation and overcoming as noise models, and their effect upon the pure message. The raw data for the piece were generated using the same random number service as *The Totality of Number*. The generator was used as a tool to create ‘meaningful’ data from ‘random’ information. The four-digit strings that were generated were then broken

down into useable data under the parameters ‘XXYYZ’ where ‘X’ constitutes slide position, ‘YY’ the duration in seconds (to one decimal place), and ‘Z’ breath intensity on a scale of one to seven.

These individual instructions were subjected to a set of group instructions, which dictated the slide movement of the group as a whole, or subsets within it. Further, these commands dictated which members of the ensemble were allowed to play sounding pitches—as opposed to breath tone—within any particular gesture. The information from these strings was then logged on graph paper, thus creating the pre-compositional material. Because each gesture has a different duration, they do not line up across the ensemble such that by the end of the piece the numbered gestures may be pages apart in different instrumental parts. The numbers above the gestures in figure 3.4 were used to keep track of each gesture across the ensemble as a whole:

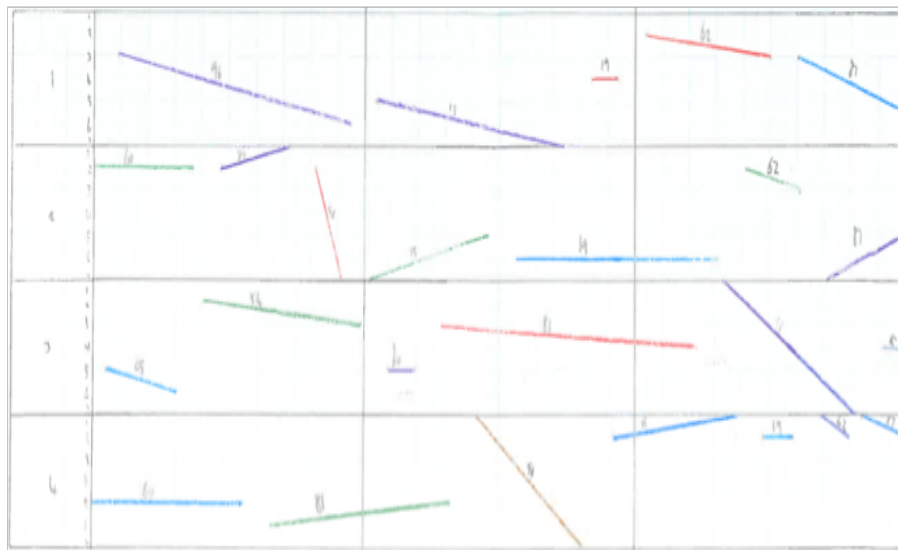


Figure 3.4: *sur votre* pre-compositional gestures

This base material was then literally cut up into cross-sectional fragments that were arranged as a form of collage to make an outline score (figure 3.5). This process was generally quite a free one—the distribution of fragments does not follow a set pattern—and was governed largely by aesthetic and structural concerns. In *sur votre*, the structure is such that the piece starts with a relatively large amount of fragmentary material, moving towards a sparser distribution as the piece unfolds. Aesthetically, I chose fragments that were related within the parts—the use of fragments with the same breath intensity, for example—but which created variation across the ensem-

ble, through, for example, timbre—the mixing of different breath intensities—or pitch through the use of contrary motion or range of gesture.

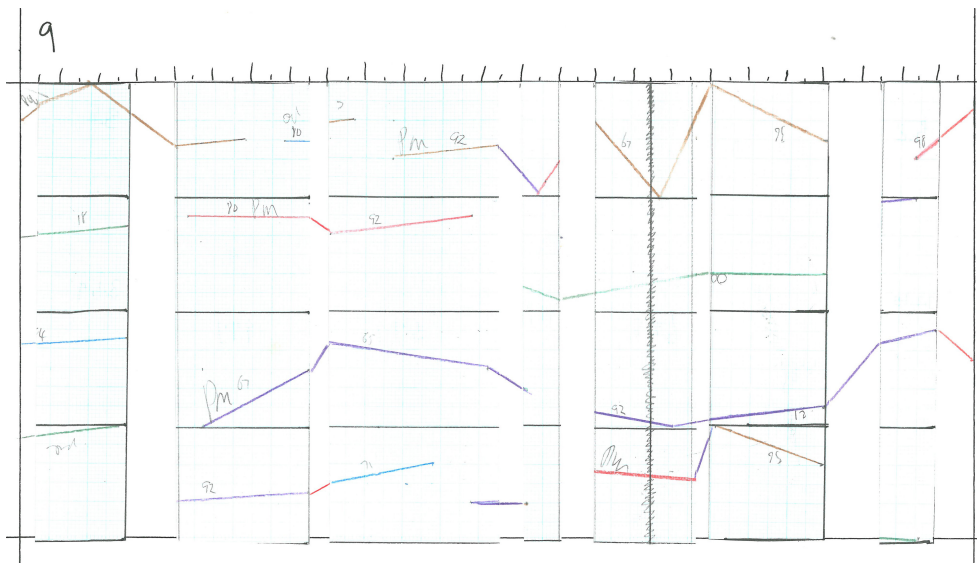


Figure 3.5: *sur votre* outline score

The next step in the process was to add extra material between the fragments to link them together. By the end of the work, this new freely composed material formed the majority of the piece. The final stage of score preparation was to set the piece in *InDesign* to remove any evidence of the composition process,⁴ as is evident in figure 3.6 below, taken from the final score.

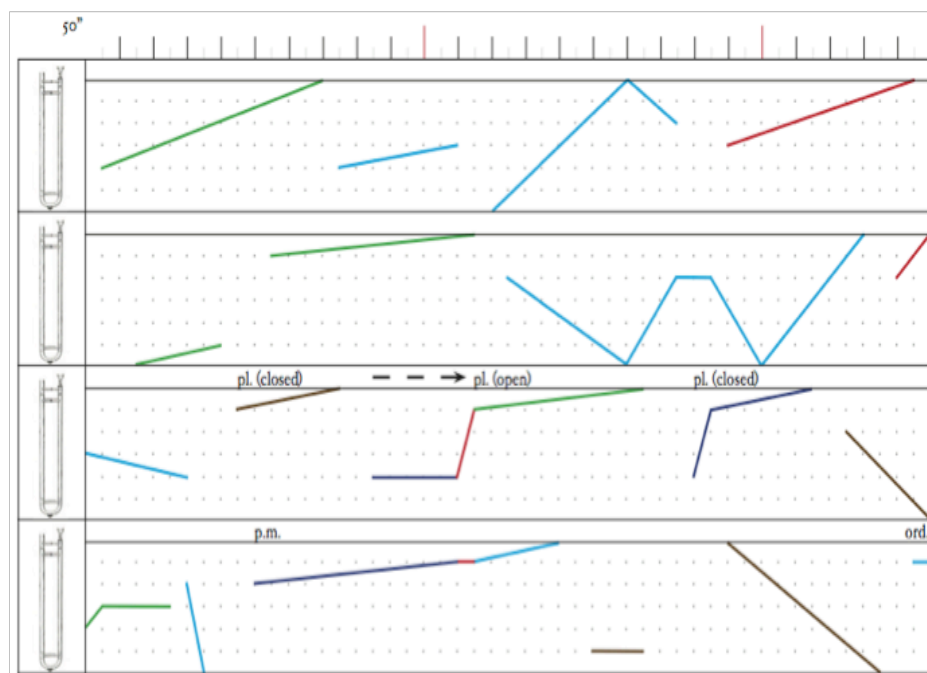


Figure 3.6: *sur votre* p.3

⁴ The masking of material is a form of noise as mediativity that comes to the fore during this stage of the project.

3.2.1.3 *Synaesthetics*

Synaesthetics is a piece for tape that utilises the models of fragmentation and mediali-ty implemented on multiple levels, though initially using fragmentation through the layering of sound samples created from scans of photographs, and mediality through the process of moving between media (the visual to the sonic). *Synaesthetics* was cre-ated as a result of a collaborative project called *Negative Terrain*.⁵ The project, which was undertaken jointly with the photographer Suzi Osborn, consisted of an occupa-tion within Leeds Art Gallery and the production of a book. Paintings were photo-graphed in the one of the galleries using a medium format camera. We then devel-oped the negatives and allowed members of the public in the gallery to deface or ‘corrupt’ them using etching needles. Some of the images were also drawn upon in pen, and some painted on with ink.

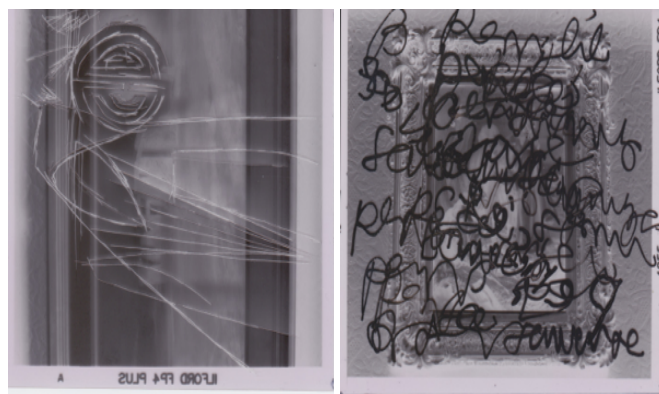


Figure 3.7: corrupted negatives from *Negative Terrain*

At this point, the project split: Suzi used the original negatives to create an art book, and I scanned the negatives in order to create *Synaesthetics* as a response to the project.⁶ The negatives were uploaded to *MetaSynth*, a program that reads the pixels of an image based on density and grayscale to create sound via a synthesizer plug-in as seen in figure 3.8. *MetaSynth* was used to create samples of the images that varied between one and fifteen minutes in length. The samples were then layered to create a thirty-minute piece.

⁵ See ‘Negative Terrain’, *Cargo Collective* <<http://cargocollective.com/suziosborn/Negative-Terrain>> [Accessed 06/03/14].

⁶ It is important to note that *Synaesthetics* exists as part of the *Negative Terrain* project, but also a piece in its own right. Whilst the photographs were taken in collaboration with Suzi Osborn, they serve merely as data for this project. The relationship between the image and sound, as well as the channel of photography, are still issues that remain relevant to the project, hence their inclusion here.

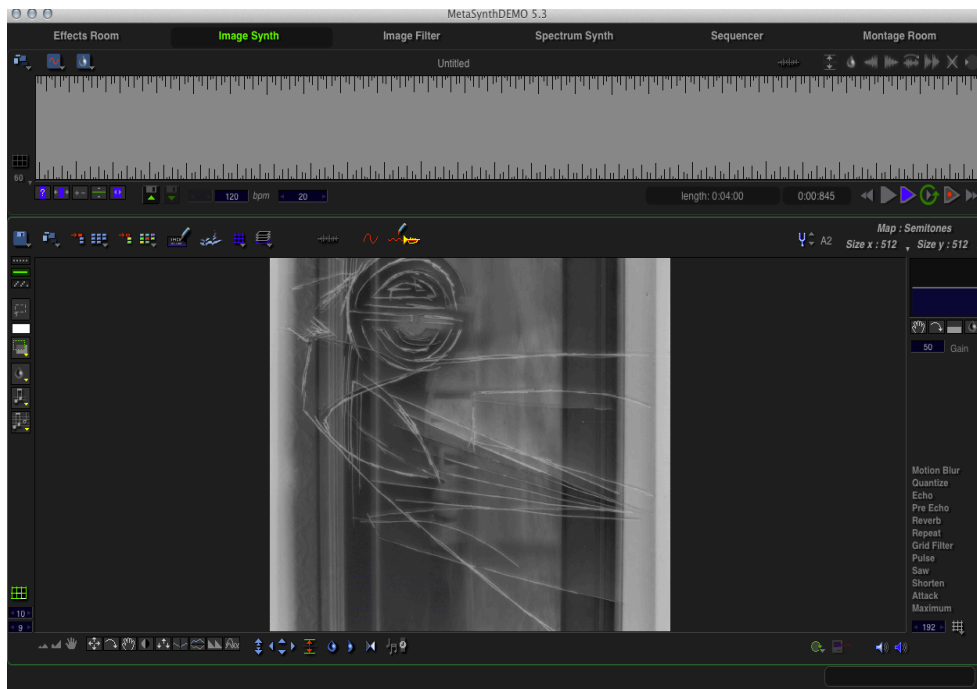


Figure 3.8: corrupted negative in *MetaSynth*

3.2.1.4 *Everyone Else But You*

Everyone Else But You is a work for voices and explores all three noise models—noise as fragmentation, overcoming, and mediality—in combination. The phrase ‘everyone else but you’ is drawn from the song ‘What Makes You Beautiful’ by the boy band One Direction.⁷ The first verse and chorus of the song are the source of all the raw data for the piece. In *sur votre* the creation of an electronic version of the score is used to mask the manifestations of noise as overcoming and noise as fragmentation from everyone but myself, acting as a development of an issue that was revealed in the commentary for *After Holmdel*. In *After Holmdel* the listener is presented with a complete and literal iteration of the processed material that forms the basis of the entire piece. The inclusion of this material allows the listener—in theory, at least—to comprehend the application of noise as fragmentation that then develops over the rest of the work. This is a necessary process within *After Holmdel* as part of this project, as it exists as a form of proof for the model. In *sur votre*, the process of fragmentation is applied with the opposite effect in mind. Whilst the score for *After Holmdel* clearly demonstrates the use of fragmentation, the process is hidden from the end-user in *sur votre*. The masking of this process prevents outsiders from

⁷ See ‘One Direction-What Makes You Beautiful’, *YouTube*
 <<http://www.youtube.com/watch?v=QJO3ROT-A4E>> [Accessed 01/02/14].

seeing the model manifesting throughout the piece. This approach to fragmentation is in some ways ‘noisier’ than the manifestation in *After Holmdel*. In these later pieces the manifestation of the model becomes ‘unknowable’. That said, both *After Holmdel* and *sur votre* use material that is generated via random numbers or other number-based processes, and are therefore never really knowable to anyone but myself. *Everyone Else But You* takes this idea further by working as a musical manifestation of steganography: the art of hiding a message in plain sight. Not only is the manifestation of the model masked from the viewer as it is in *sur votre*, but the material that is hidden is a piece of popular music. The material for the piece was analysed on a phoneme-by-phoneme basis and marked in time-code on a five-line staff.

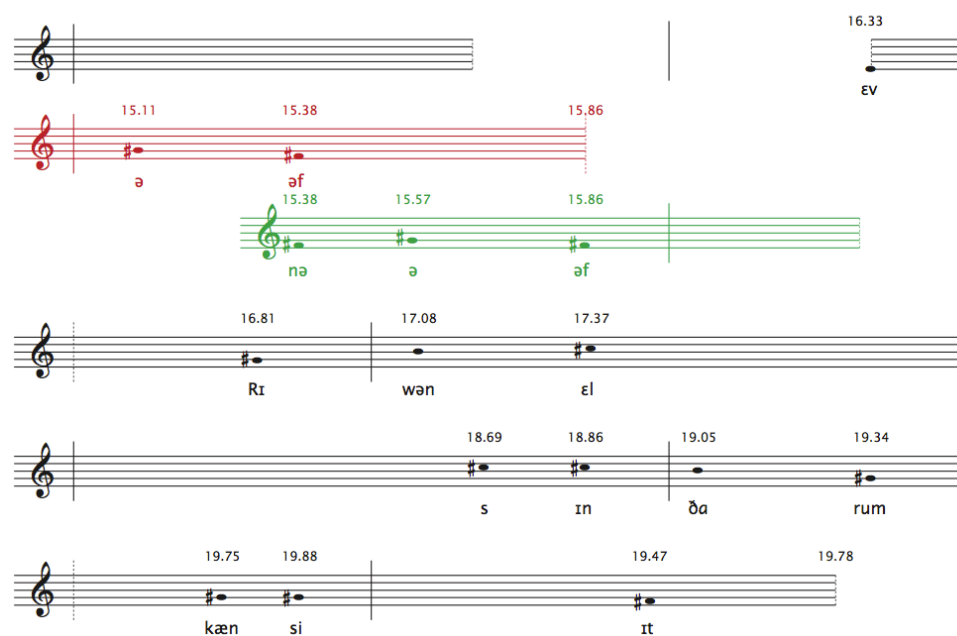


Figure 3.9: pre-compositional material for *Everyone Else But You* (coloured lines indicate multiple vocal parts in original track)

The text of the song in figure 3.9 is reasonably easy to decipher (when one knows what it is), with each phoneme appearing in its entirety with the time code above. The material was then gathered together to form an outline score—in much the same way as the fragments in *sur votre*—which then formed the basic structure of the final piece. The material was also stretched so that each line is the same length, and the blank spaces—originally indicating rests—were removed. Extra musical material including some beaming and dynamics were then added to create a first draft of the piece. Individual phonemes were also split and *glissandi* added in the same way that

linking material was added to the outline score for *sur votre*, as well as to mask the original material in order to make the process unknowable.⁸

The image shows a musical score for two voices, labeled 'voices 2 and 4'. The score is divided into two systems by vertical dashed lines. The first system contains measures 44 and 45. The second system contains measures 46, 47, and 48. The lyrics are: 'si' (measure 44), 'jul' (measure 45), 'ni η h ε 'd' (measure 46), 'z wen' (measure 47), 'bə' (measure 48), and 'liv' (measure 48). Dynamics include *pp* (pianissimo) and *p* (piano). The notation includes notes, rests, and dynamic markings with hairpins.

Figure 3.10: *Everyone Else But You* bb. 44-48 voices 2 and 4

3.2.2 Noise as overcoming

Noise as overcoming is one of the models in which noise acts as an external event upon the perceived pure message—as envisaged by Shannon—and can be summarised as an external event which floods a receiver with excess information, thus shielding the provenance of the intended—or pure—message. In the previous chapter, this was explored through the piece *Dualities*, where the manifestation of overcoming was concerned primarily with the implementation of physical hardship upon the performer, with limited sonic reward. This is developed in this part of the project, both through its combination with different noise models, and a refinement of its application. Through performance and analysis of *Dualities*, it became clear that noise as overcoming did not necessarily have to include the use of sonic material that is excessively loud. The finger positions that performers were asked to maintain—between the bow and nut—in combination with the excessive duration of single gestures—specified as a single up- or down-bow if possible—were physically uncomfortable to maintain. These conditions resulted in a piece that is, for the most part, inaudible. The sections of the piece that are louder serve almost as a release or

⁸ See p. 63.

return to normality, allowing the performer to speed their bowing, and for the listener to stop straining to hear the piece. In terms of the model of noise as overcoming as conceived here, these sections serve as the least noisy parts of the piece.

Dualities demonstrates that noise as overcoming can be applied to almost any parameter of a piece, rather than merely residing in the sonic result. The use of parametric notation in the pieces that form this section of the project is therefore hardly surprising. This parametric approach is most visible in *The Totality of Number* for solo flute. Here noise as overcoming has been applied as a psychological tool, perhaps better described as noise as overwhelming. This is most obvious through the use of notation employed throughout the piece.

The image shows a musical score for measures 57-60 of 'The Totality of Number'. It features a complex parametric notation system. At the top, there are several horizontal lines in green and blue, representing different parameters of the music. Below these, there is a standard musical staff with a treble clef and a 4/4 time signature. The notation includes various rhythmic values, such as eighth and sixteenth notes, and dynamic markings. The score is divided into four measures, with a key signature change from one flat to two flats between measures 58 and 59.

Figure 3.11: *The Totality of Number* bb.57-60

This notation is, in fact, the product of several refinements intended to make the piece *easier* for the performer to read. However, despite this refinement, there is still a huge amount of material to digest. This approach to overcoming is comparable to the flute music of Brian Ferneyhough. With reference to *Cassandra's Dream Song*, Ferneyhough notes that

the material has been intentionally so slanted as to present, at times, a literally 'unplayable' image. The boundary separating the playable from the unplayable has not been defined by resorting to pitches lying outside the range of the flute, or other equally obvious subterfuges, but has been left undefined, depending for its precise location on the specific abilities of the individual performer, whose interpretational endowment forms a relativizing [*sic*] 'filter' (Ferneyhough in Boros and Toop eds, 1995 [1978], 5).

Ferneyhough describes a notational landscape in which the principal measure of playability is found in the ability of the performer, not in the requirements of the notation. There is a distinction to be drawn here between notation that is difficult to realise—such as that of *The Totality of Number*—and that which is literally impossible. The primary objective of the work is not, in any case, total fidelity to the notation itself, but more the energy created in *attempting* to engage as fully as possible with the notation as an idea.

To a large extent this energy is the same in *The Totality of Number* as in *Cassandra's Dream Song*; a successful realisation is not necessarily concerned with the

performer's ability to execute everything that is asked for in the notation faithfully. The very notion of decoupling the body to this degree is problematic. The true nature of the piece lies in the attempt—and probable failure—of the performer to reproduce what is written in full. This is not to say that the piece is impossible to realise. I suspect that there are several professional flautists who would be able to realise the piece fully though I would suggest that this realisation would come as the result of a great deal of preparation.⁹

The ability to realise *The Totality of Number* is something that differentiates it from the work of composers such as Ferneyhough. Often, 'complex' composers write material that is literally impossible to recreate. The distinction here is, I think, located in the approach to notation. Whilst Ferneyhough's notation is concerned with a particular sonic outcome, the notation in *The Totality of Number*—or, at least, the parameter that deals with finger mechanics—is concerned with the physical relationship that the performer has with the flute. To this extent *The Totality of Number* is concerned with the notion of being overcome: struggling to realise a work and probably failing, whereas Ferneyhough's work can only end in failure and, in the sense apparently intended by Ferneyhough, the performer's ability to transcend their physical limits. In addition to the failure to realise the notated material, *The Totality of Number* also presents failure as a sonic fact. Even if the performer is able to realise the notation fully, the sonic result exists as juxtaposition to that effort, which is to say that the piece sounds as if the performer is unable to play the instrument. This is another departure from complex parametric material presented by composers like Ferneyhough or Aaron Cassidy, both of whom it could be said 'reward' their performer's efforts with the creation of virtuosic sonic material. Cassidy's *What Then Renders These Forces Visible is a Strange Smile* for solo trumpet, the opening of which, shown in figure 3.12, is a good example of this virtuosity. The piece in many ways looks similar to *The Totality of Number*, with rhythmic divisions split over different parameters of the instrument and the use of lines to indicate physical actions, in this instance, slide and embouchure. However, the sonic result is markedly different. Whilst the Cassidy moves at a frenetic pace with very clear articulation of changes in fingering, embouchure and dynamic, *The Totality of Number* seems far more static. The movement between fingerings does little to change the overall pitch of the flute, often doing nothing more than minutely altering the colour of a single tone

⁹ Indeed this turned out to be the case when the piece was shown to Bettina Berger of Ensemble Interface, who was able to play most of the piece after some practice. The recording submitted is not Berger, but rather a student from The University of Leeds and is made up of dozens of small fragments pasted together.

or eliciting multiphonics. The general dynamic of *The Totality of Number* is also far quieter, with levels of air pressure falling below that which is required to create pitch.

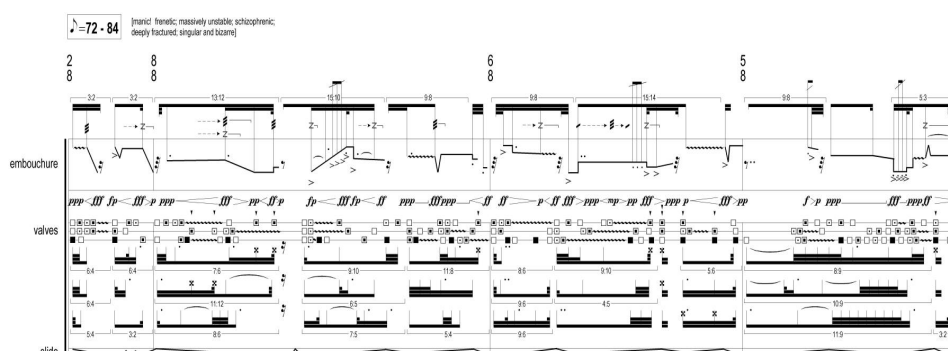


Figure 3.12: Aaron Cassidy's *What Renders These Forces Visible is a Strange Smile*: opening

Noise as overcoming in *Dualities* is concerned only with a physical overcoming of the performer through the use of uncomfortable finger positions and extreme note durations. Whilst *The Totality of Number* may appear to present a physical challenge, its approach to overcoming is exclusively psychological. Whilst some of the finger positions in *The Totality of Number* may be abnormal for a performer due to their non-standard nature, the notation is designed to be ergonomic and therefore physically realisable. The parameters of the notation require the performer to reassess their own understanding of how their instrument works, and also how they work with their instrument.¹⁰

The application of noise as overcoming in *The Totality of Number* is very much visible in the final draft of the piece; any person looking at the score can see that the piece employs a dense notation that requires careful study to decipher. A potential development of this idea would be to see if the model could be applied in ways that are not immediately visible to in the final score.¹¹ This is perhaps linked to the idea that the ontological is unknowable, especially if the model's manifestation was implemented in such a way that it was not visible in the score at any point, but was, rather, embedded within the compositional process itself. The trombone quartet *sur votre* takes this approach as its starting point by applying the model within the compositional process, rather than on the surface of the piece. This creates a new point in the development of the model: the move from physical overcoming of the performer, to psychological overcoming, and then overcoming as process. The first

¹⁰ This was a controversial aspect of the piece for Berger who felt that the mechanistic approach on my part did not consider her as a performer. *Null*, a piece for bass flute that is discussed later in this chapter is, on one level, a response to this criticism.

¹¹ Indeed, this technique is applied later in the piece *Null*. See p. 83.

two steps in this progression are focussed on the performer through extended technique and notation. The third step, on the other hand, focuses on the writing. In *sur votre*, noise as overcoming is no longer concerned with the performer at all, but is instead embedded in the writing process. This process takes the form of extra material that appears between the fragments of raw data in the outline score. Initially, this material exists in the form of linking material as seen in figure 3.13. As the process progresses later in the outline score, the extra material plays a more central role.

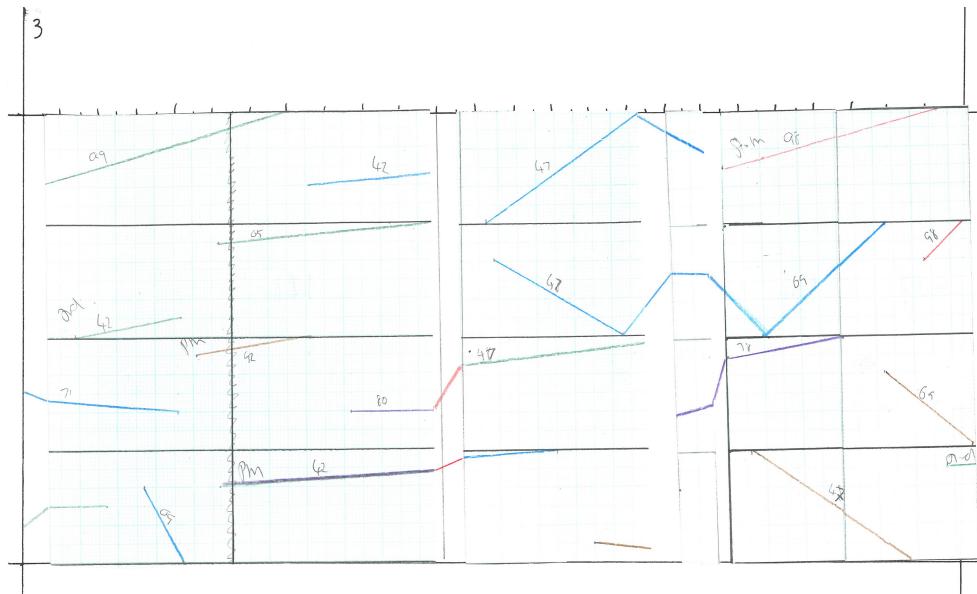


Figure 3.13: *sur votre* outline score p.3

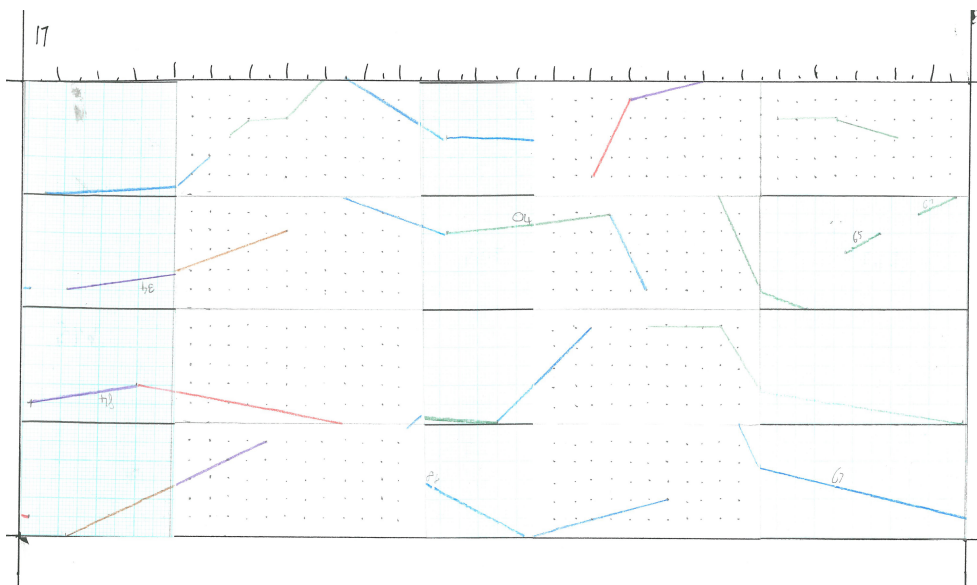


Figure 3.14: *sur votre* outline score p.17

In figure 3.14—taken from page seventeen of the outline score—two things are apparent. First, there is much less ‘original’ material—written on graph paper—present on the page; over fifty per cent of the material is new. Second, the new ma-

material is no longer acting purely as linking material: it starts and finishes of its own accord. Putting aside the fact that the original material is on graph paper, the line between the 'pure message' and the excess becomes blurred. This is especially true of the top part of the score where three gestures exist independently. By the final page of the outline score (figure 3.15), it is apparent that the new material has now 'overcome' the piece, leaving only one fragment of the original material present which acts as a kind of reference point for the rest of the page.

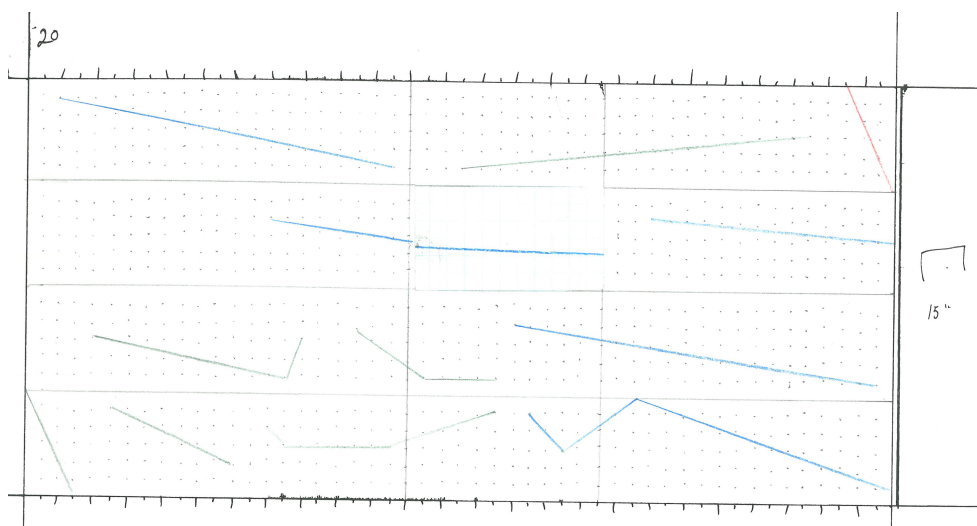


Figure 3.15: *sur votre* outline score p.20

Noise as overcoming in *sur votre* is not interested in the physical, and exists only on a compositional level. The implementation of the model in this way means that the model is not visible to anyone who may come into contact with the score. This is because the final score was created in *InDesign* and shows no evidence of the collaging of fragments or the addition of linking material. The shielding of the model in this way is akin to hiding the model in plain sight, though this masking provides no way for the end-user to discover the model. The performer engaging with the model without being conscious of it in some ways makes the application of the model ontologically noisier itself, as the performer's engagement with the model is unknowable. The development of the model over the course of *sur votre* reveals two things about its nature. First, the model does not have to be visible to external viewers in order to be successful (in fact, the shielding makes the model noisier), and, second, overcoming need not be related to any physical aspect of performance or reception. This suggests that the model of noise present in Noise Music is either not the only kind of noise as overcoming, or that it is something other than sonic extremity that identifies it as noise.

In *Everyone Else But You*, noise as overcoming is manifested in the piece through the addition of new pitch material to the outline score. This addition of material is similar to the approach taken in *sur votre* in which extra gestural material is added and eventually takes over the original material almost entirely (though this is only really visible when looking at the physical outline score).

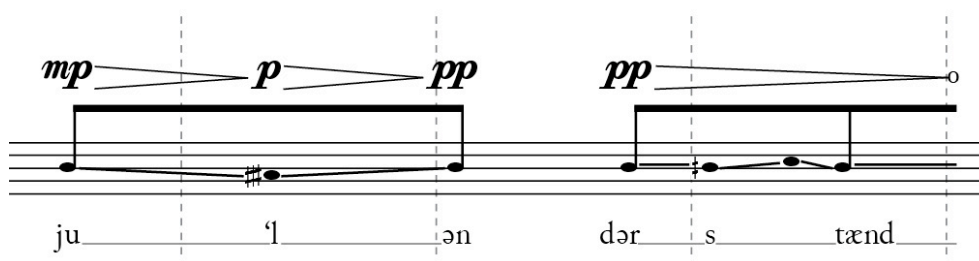


Figure 3.16: *Everyone Else But You* bb. 35-38 voice 1

In figure 3.16 there are two phrases that make up the words ‘you’ll understand’. Here the original material has been overcome on three levels. First, the phonemes have been split: ‘you’ll’ has become ‘you-ll’ with emphasis added to the ‘ll’. Second, the pitch has been altered: whilst in the original ‘you’ll’ sounds on a B in this fragment,¹² the pitch moves downwards from a B to a A three-quarter sharp. Finally, the dynamic has been added moving from *mp* to *p* and then to *pp*. All of these changes contribute to an overcoming of the original material in the form of masking: the sense of meaning is somewhat lost on a graphic level, and the words become unintelligible when performed. The level of overcoming—when compared to *sur votre*—is less severe, serving more to augment/mask the material that is already present. Overcoming is manifested here as a constructive rather than destructive process.¹³ This is to say that the material added works as a musical development of rather dull raw pitch material taken from ‘What Makes You Beautiful’. Noise as overcoming is used here as a tool for qualitative augmentation of material. This is different from its application in *sur votre*, through which the material is merely quantitatively increased, or in *Synaesthetics* where overcoming exists as a form of affect.¹⁴

From these observations about the role of overcoming in mixed works, it is easy to see a line of development, taking noise as overcoming from the physical to the psychological, and then into the compositional process itself. The role of over-

¹² The octave in which the B sounds is up to the performer (see performance notes for *Everyone Else But You*)

¹³ The manifestation of noise as a constructive process is also present in *After Holmdel* and *sur votre* as well as later in the portfolio.

¹⁴ See p.19 for a discussion of affect in relation to noise

coming takes a blunter graphic form in *sur votre*, before becoming embedded in the form of *glissandi* in *Everyone Else But You* where the purpose of the overcoming is to mask meaning rather than dissipate generated material.

Noise as overcoming has clearly developed as a concept over this section of the portfolio. The model has moved in two different ways: first, from a kind of physical overcoming concentrated on the performer to a psychological one, and second, from the performer to the processes that makes up the piece, as a part of the composition itself. I will now work chronologically through the pieces that use noise as overcoming to give a sense of this movement during the project.

Dualities utilises noise as overcoming on a very basic level, that is, as a form of physical strain upon the performer. Players are asked to maintain very uncomfortable positions on the fingerboard for extended periods whilst at the same time exerting a high level of control over the use of the bow. The presence of the model is clear to the performer who must battle against the discomfort caused by maintaining these uncomfortable finger positions and struggle against the urge to finish the gesture quickly by increasing bow speed.

In *The Totality of Number* the model is still imposed upon the performer directly, though the focus is switched from the physical to the psychological. Here, the model is present in the parametric approach to notation, especially in the use of different lines to represent keys, of which there are more than the performer has fingers. The model is developed here as the performer is not physically overwhelmed—the material does not ask the performer to play in a manner that is uncomfortable as is the case in *Dualities*—but psychologically, as they are asked to process a large volume of data. There is some crossover, however, between the psychological and the physical as the performers' attempts to realise the work may lead to them being overcome, with the model manifesting as a 'mistake'. There is a tension that is created in the act of realisation in that the performer may be able to realise the score, though it is a struggle to play it perfectly. However, even if the performer is able to reproduce the material accurately, incongruence is present in the lack of sonic virtuosity that is afforded to an accurate realisation in relation to the amount of effort required to create it. Whilst the model has moved from the physical to the psychological, the model is still present in performance and is, as a result, still a relatively simplistic implementation.

In *sur votre* the model ceases to be present on the surface of the piece and is, instead, present within the writing process. The model manifests during the latter stages of creating the outline score in the form of connecting material for fragments, which eventually become detached gestures, unrelated to the fragments that are glued to the score. These new fragments are very clear when seen in the outline score as they are drawn directly on to the paper upon which the fragments are mounted. However, by digitising the score in *InDesign* this visual distinction is lost and there is no way to discern the new gestures from the original fragments. The piece is not difficult to realise, as there is little or no material that falls outside what is ‘reasonable’ for the trombonists.

In *Everyone Else But You*, the focus is still on the model manifesting within the writing process, but the use of text signifies further development. The use of One Direction lyrics complicates the ‘unknowability’ of the model manifested within process that is not visible on the surface of the piece. Noise as overcoming is implemented through the addition of new pitch material to the outline score in the form of *glissandi*: a technique that is very similar to the one utilised in *sur votre*. However, in *sur votre*, the material which is being augmented has no real-world significance, it is merely material generated using an algorithm. By using known material, it is possible that one may be able to discern what material is added and what is part of the pure message. In this sense, *Everyone Else But You* is an exercise in steganography, and through its use, noise as overcoming has been further refined. Whilst the use of the model in *sur votre* is masked by the digitisation of the score, the use of known material in *Everyone Else But You* is both knowable and unknowable at the same time. All of the pitch and phonemic material from the first verse and chorus of ‘What Makes You Beautiful’ is present within the score, but by slowing the material down, splitting it across several parts and adding extra pitch material, the nature of the material is not necessarily apparent to either the performer or the listener. The piece acts as a practical example of the Goodman’s noise model as outlined in figure 1.4 in chapter one: whilst the receiver accesses the pure message in its entirety, she is unable to discern the pure message from noise.

The development of noise as overcoming during the course this section of the portfolio has revealed several things about the nature of the model. The transfer from overcoming of the performer to overcoming of the writing process reveals that noise as overcoming is not dependent upon discomfort on the part of the performer or the listener. This approach to noise as overcoming is a departure from the normative application of this model, which is to say, its implementation in Noise Mu-

sic. This means that noise does not need to be a loud sound, but also that noise does not need to be a sound at all. The manifestation of noise as overcoming in *sur votre* and *Everyone Else But You* demonstrates that the model can exist without being explicitly knowable. This is related to the previous point, but also implies that noise can—and perhaps does—manifest in this way more often than one might think. In fact, all communication may be subject to this kind of noise all of the time, but as something that is embedded in the process of communication, is often not identified as noise. The idea that noise as overcoming can be embedded in the process of communication itself elides it with the concept of noise as mediality.

3.2.3 Noise as fragmentation

Noise as fragmentation is the second noise model that acts as an external event upon the transmission of information. This is, like noise as overcoming, concerned with acting upon the pure message. However, unlike noise as overcoming, noise as fragmentation exists as a form of violent action that causes part of the message not to be received by the receiver. This fragmentation could cause the context of the message to be lost or misinterpreted. In the previous chapter, this model was explored through the work *After Holmdel* in which the pure message is presented in full at the opening, before being broken up over the course of the piece. During this stage of the project, fragmentation is drawn into the compositional process itself, rather than remaining visible on the surface of the finished piece. In *sur votre*, noise as fragmentation is implemented at the core of the compositional process through the generation of raw data, specifically the parsing of random number strings into the XYZ format mentioned previously, and subsequent ‘collaging’ of the line material (figure 3.17) to make the outline score (figure 3.18).

This processing of data is, in terms of the models, the creation of a new pure message. The message is not pure in the sense that it is an unadulterated piece of information sent from a receiver, but is rather something of which *I* have no prior knowledge. At this point in the project, the notion of the pure message is questioned. Any message transmitted has already travelled through a number of channels and is, as such, already potentially corrupt(ed). However, for the purposes of an exploration of noise as fragmentation, I will continue to refer to pure messages, though more as a way of identifying material that is about to pass through a channel. In addition to the manifestation of noise as fragmentation, this is also an exam-

ple of noise as mediality: manifested by creating meaning from apparently random data.¹⁵

The processed material was then cut into strips and rearranged on new pages. At this point noise as fragmentation is being consciously applied to the compositional process; the fragmentation of the original material is used to create an outline structure for the piece as seen in figure 3.17 below.

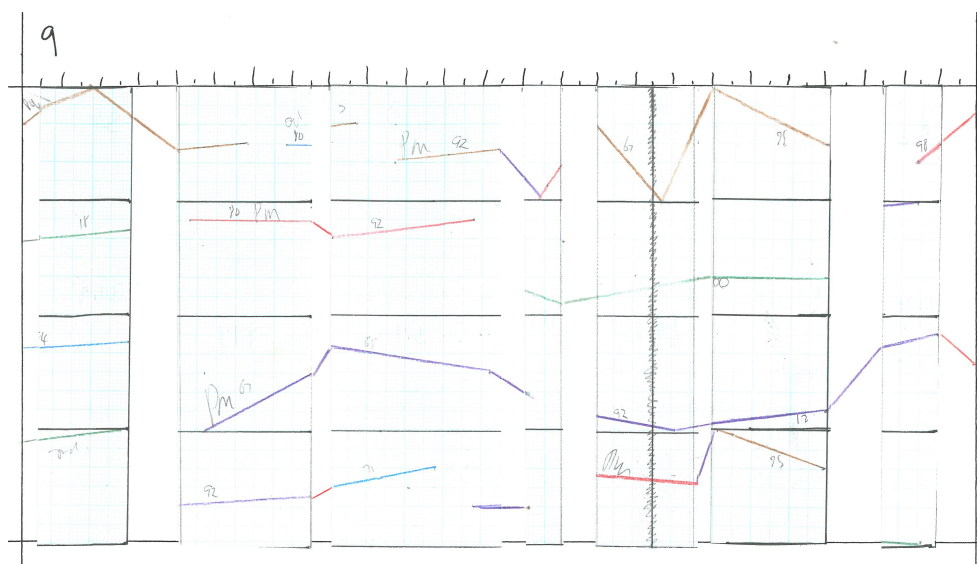


Figure 3.17: *sur votre* outline score p.9

Within the structure of the outline score, the order of the material has been fragmented in order to create sections around which the piece could be through-written based on practical and aesthetic concerns as previously mentioned. In addition to a linear fragmentation, a vertical fragmentation is also applied as the outline structure develops. In figure 3.13, the fragments are full cross-sections of the raw data, but in later sections of the score, the data are further fragmented, allowing material to be re-distributed between the different members of the ensemble.

The application of noise as fragmentation in *sur votre* represents a departure from previous manifestations of the model in two ways. First, the application is embedded within the pre-compositional stages of the piece only. Whilst in *After Holmdel*, the model's manifestation is clearly visible on the surface of the piece, in *sur votre* it is only visible when looking at the outline score, something that a performer would not have the opportunity to do. Figure 3.18 is taken from the final score, which was written using *InDesign*, and shows no evidence of the outline score, denying a performer access to any evidence of fragmentation taking place.

¹⁵ The data created through the string generator is, of course, not random owing to the numbers being generated by an algorithm, though for my purposes—and the lack of knowledge on my part—it can exist as a 'pure message'.

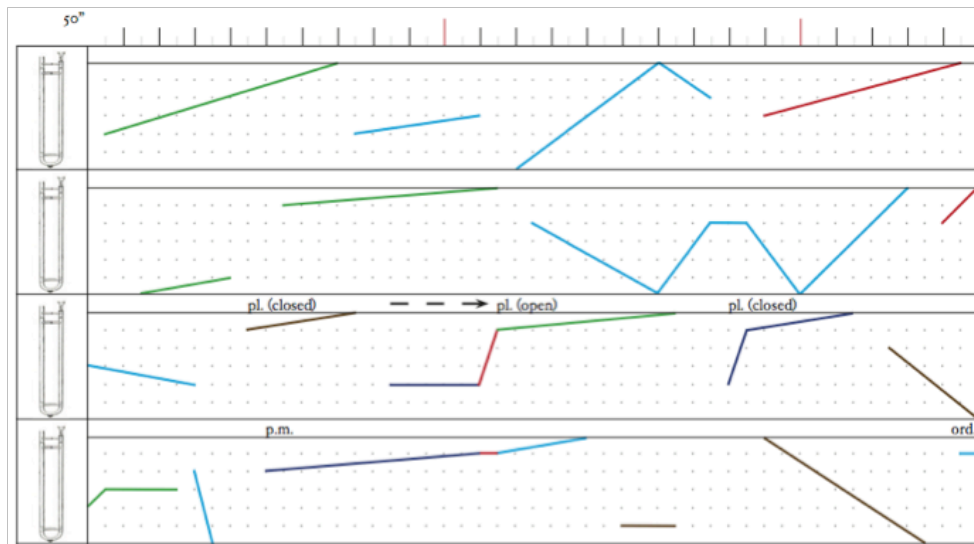


Figure 3.18: *sur votre* p.3

Second, whilst *After Holmdel* applied noise as fragmentation on one level only—the fragmentation of processed pitch and rhythm within the ensemble—*sur votre* utilises the model on multiple levels: the creation of data using the number generator, through the processing of that material to form the raw data, as seen in figure 3.4, before the material is fragmented through its distribution within the outline score. In *After Holmdel*, raw data is presented in full before being fragmented, whilst in *sur votre*, the material has gone through several versions that are not visible to the performer or the listener. To viewers who are not aware of the outline score, therefore, the final score exists as a kind of pure message. To anyone who has seen the outline score or the raw data, this is not the case. Multiple iterations of the process, therefore, undermine the concept of the pure message.

Noise as fragmentation is principally manifested in *Synaesthetics* through the act of physically defacing photo negatives using needles. The process of scratching removes the silver oxide from the surface of the negatives, thus literally destroying data from the pure message. On this level the manifestation of noise as fragmentation is very obvious, though the process has no effect upon the sonic result at this stage. The message is also blocked/fragmented on a sonic level by the cutting up of samples within the final piece. This fragmentation includes the use of very small sections from the image to create pulsing/rhythmic samples. An example of this is the sample that is heard by itself at the start of the piece and remains almost entirely throughout as a kind of base on which the rest of the piece is built. Noise as fragmentation is an integral aspect of the piece on both a pre-compositional (visual) and compositional (sonic) level. The interaction of these two separate manifestations

creates a kind of meta-fragmentation, which is to say, the fragmentation of a sonic manifestation of an image that has already been visually fragmented. This fragmentation is also a kind of corruption, as the visual sample—which exists within the channel of the negative—becomes part of the sonic sample and is thus placed within the channel of the piece. This is to say that the image has its own space—or channel—that is subject to noise before it is placed within the sonic channel, thus exposing it to multiple iterations of corruption, not least the corruption manifested in the channel through which the visual artefact is transferred to a sonic one.

Noise as fragmentation has primarily manifested itself within the *Everyone Else But You* in the creation of the outline score. This is very similar to the approach taken with *sur votre* in that the raw data is literally cut up and arranged on new pages as a collage. The process is then hidden within the final score by electronically re-arranging the fragments in a new document format. In addition to the literal fragmentation of the raw data, some phonemes were split and moved to pitch material that was added during the editing of the outline score. This means that phonemes—or fragments of them—appear with pitches that are not part of the original material. Whilst in *sur votre* the material is new and merely acts as a form of overcoming, in *Everyone Else But You* the material both overcomes *and* fragments through the splitting of phonemes.

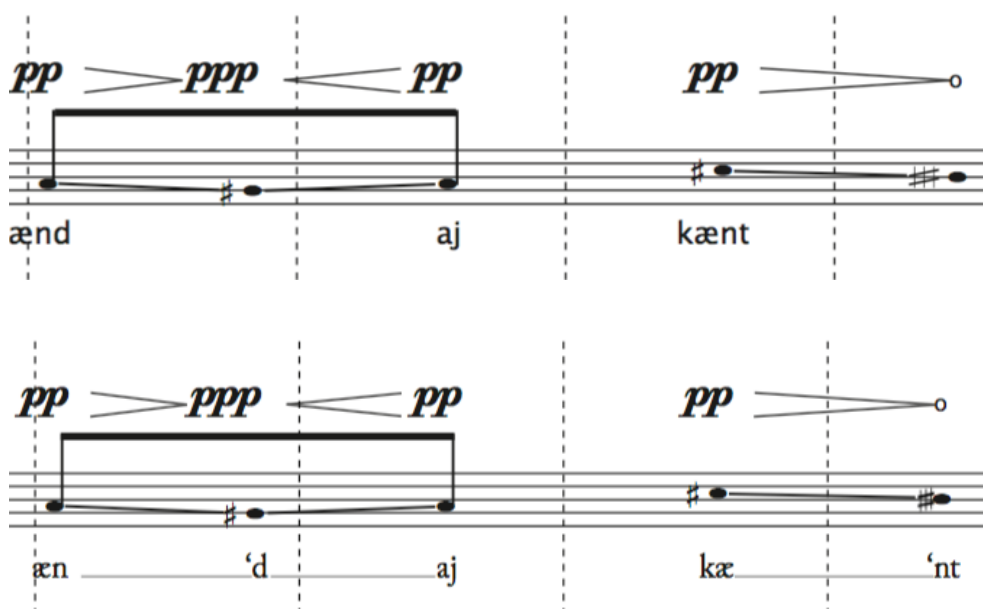


Figure 3.19: *Everyone Else But You* bb. 4-7 voice 1: before and after

Figure 3.19 shows the same fragment from the first page of the score before and after editing. In the bottom system, the first and third phonemes have been split and extended to the G sharp and B three-quarter sharp respectively. Through this split-

ting *Everyone Else But You* approaches fragmentation on a more nuanced level than *sur votre* through the fragmentation of fragments as part of the compositional process.

As with noise as overcoming, an investigation of pieces utilising noise as fragmentation has revealed several things about the model in and of itself. The implementation of noise as fragmentation in *sur votre* reveals two things about the nature of the model and its effect upon the pure message. First, the model can be implemented multiple times during the course of a single piece. It is possible to suggest, that in some way, noise as fragmentation is present in all stages of the work, and retrospectively, may be found to be present on multiple levels in *After Holmdel*. Second, and perhaps more importantly, the multiple applications of the model reveal that the notion of a pure message is, in this context at least, a fallacy. The appearance of purity is an illusion of ignorance, though this is principally due to the fact that the existence of the outline score is something that the performer cannot know. The process through which the original strings of numbers were generated is a channel in itself, and as I do not know exactly how those numbers were generated, every member of the process is unaware of the original source of information.

Noise as fragmentation here has a more direct impact upon the final piece. Whilst in *After Holmdel*, the process of fragmentation is present on the surface of the score, this blunt approach is refined in *sur votre*, where the fragmentation and redistribution of lines is masked in the final score. Whilst *Synaesthetics* takes a more direct approach to the issue of fragmentation, this is not necessarily a step backwards. Because of the nature of the piece—which is to say, a tape piece with no score—the effect of fragmentation augments the overwhelming sonic experience, further disorienting the listener. Within the pieces, there is a combination of very blunt, and somewhat more complex implementations of noise. This is usually a distinction that can be understood through the generation of material, for example, the processing of random number strings, and some of the choices made in the writing process, such as the collage approach to fragmentation used in *sur votre* and *Everyone Else But You*. The choice to create a piece of Noise Music in *Synaesthetics* was a blunt one, and was the result of the kind of material that had been created through *MetaSynth*.

Owing to the presence of multiple micro-channels—and formats—at work within *Synaesthetics* the analysis of the relationships between models is further re-

fined. The location of the pure message, for example, has an effect upon the way in which the models behave. Noise as fragmentation in *Synaesthetics* relies to some extent on the pure message being located within the negatives, as the negatives are the point at which *Negative Terrain* ends and *Synaesthetics* begins. The notion of multiple points of origin also highlights the fact that each manifestation of fragmentation described coexists with a manifestation of noise as medial. For example, the act of fragmentation via scratching is a form of interaction or communication with the negative by a viewer, and this interaction exists within its own micro-channel through which the negatives can be viewed. If the pure message is manifested within the unscratched negative, then the interaction of the person in the gallery corrupts that message such that it is no longer pure. However, within the *telos* of *Synaesthetics*, it is assumed that the scratched negatives are the original—and therefore pure—message. The act of defacing negatives also reveals something about the nature of the model at work here. In the act of defacing, participants in the gallery engaged primarily in the act of fragmentation, which is to say, that by scratching the negative they were removing elements of the original data. However, as the negative can be viewed as a form of channel, this action is also a kind of corruption. In this act, therefore, noise as fragmentation and noise as mediality can be understood to be manifesting simultaneously. The act of scratching the negatives not only fragmented the original material (the silver oxide) but also added new material in the form of images and words.

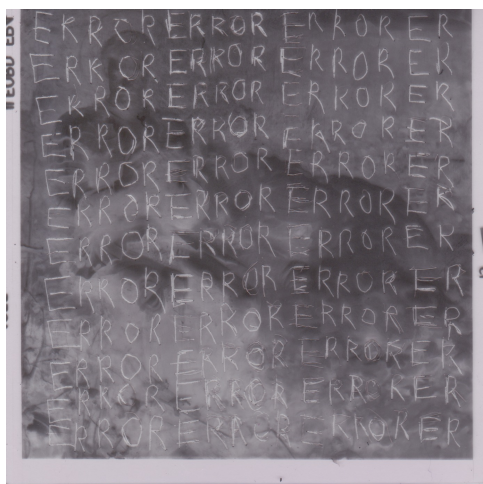


Figure 3.20: negative ‘overcome’ with text

In figure 3.20 the original image is obscured by the repeated use of the word ‘error’. In this example, the *removal* of the silver oxide is also the *addition* of new material that overcomes the original, pure, message. Not only does the act of scratching manifest the models of noise as fragmentation and corruption, but also of noise as

overcoming. In this instance, then, one can observe all three noise models manifesting simultaneously.

Noise as fragmentation in *Everyone Else But You* is a combination of the refined and blunt approaches just mentioned. The act of splitting phonemes and using *glissandi* is certainly representative of a very visible approach to change, and this change is clearly present on the surface of the piece. As in *sur votre*, however, these changes are not visible to anyone other than me. The difference between the approaches taken in these two pieces can be found in the relevance of the material being used. In *sur votre* the material is generated in the form of random number strings, and it has little meaning in the first instance other than being treated as a form of pure message. The material used in *Everyone Else But You*, however, can be said to have more intrinsic meaning in its unaltered state. The meaning of the original material is lost through the compositional process, but new meaning is created in the form of *Everyone Else But You*. This again demonstrates to some extent the ability of noise as fragmentation to create something positive out of what might be considered to be a highly destructive process.

As with the manifestation of noise as overcoming in *Synaesthetics*, noise as fragmentation manifests within works unconsciously. This can be seen in *The Totality of Number* where noise as fragmentation is present in the form of parametric notation. This approach to notation is interesting as the distribution of information over each key of the flute is a form of fragmentation that seeks to overwhelm the performer. This act of overwhelming in turn increases the likelihood of the performer making a mistake thus revealing noise as mediality present in the channel of the piece. This analysis of the notation in *The Totality of Number* reveals another instance of all three noise models manifesting simultaneously in a single action.

3.2.4 Noise as mediality

Noise as mediality is, to some extent, present in all of the works in the portfolio. However, for the purposes of this section, I will focus primarily on the works in which it has been deliberately implemented. Generally speaking, these implementations are not as blunt as the implementations of noise as overcoming or fragmentation, and tend to exist solely within the process of composition itself, owing to the nature of the channel and noise, which is to say, '[t]here are channels and thus there must be noise' (Serres, 2007 [1980], 79). Unlike the other models, which situate the manifestation of noise as a static point (or multiple points) within a set channel,

noise as mediality *must* be dynamic owing to its location within the channel itself. Across this section of the portfolio, the implementation of the noise as mediality moves from the practical to the conceptual, from its use in the physical score through notation in *The Totality of Number*, to an embedded part of the early conceptual framing of the work, such as the gathering of visual materials for *Synaesthetics*.

The appearance of the notation was subject to constant refinement throughout the compositional process in *The Totality of Number*, and this process cements the recurrent manifestation of noise as mediality over the course of the piece's creation. With each new version, choices have been made that further develop the material, sculpting it into the final piece. Each of these revisions can be viewed as a mini-channel, through which the piece has been crafted. Indeed, the very notion of the compositional process is itself a channel through which information has been corrupted as practical and aesthetic decisions are made. This process of refinement is another example of noise as mediality working in a positive way: by obscuring the original processed material—that might be understood as the pure message in this instance—I am creating a notation that makes the realisation of said material easier.¹⁶ This overarching process of refinement exists alongside the many other tiny alterations and compositional choices that present themselves during the production of any piece.

Noise as mediality is the most complex manifestation of noise in *Synaesthetics*, and arguably within the project as a whole. This is not because it is the most difficult to comprehend, but rather that it seems to exist *within* the other models. The very nature of the communication model through which the manifestations are structured creates a channel, and therefore the inevitable corruption of that channel. The act of photography is itself a framing of being, a literal snapshot. Crocker, however, asserts that noise as mediality can only exist when communication is viewed over time: the photograph may age and chemically corrupt, but it is still essentially static. The implementation of noise as mediality in *Synaesthetics* begins during the creation of *Negative Terrain*. The negatives themselves exist as a corruption of the original image being captured. These images are defaced and therefore corrupted further. By processing the negatives in *MetaSynth*, the data are corrupted on two levels. First, they are translated from visual to sonic entities. Second—as a result of the translation from visual to sonic—the data ceases to be temporally static

¹⁶ The notion of 'easy' is relative here, as the notation for *The Totality of Number* is, in fact, designed in such a way as to overcome the performer.

and now exists as a sound in time. Finally, through the use of fragmentation, the samples are then corrupted to create the final piece.

The way in which noise as mediality manifests within the works discussed here reveals something about the nature of the model. Whilst *The Totality of Number* approaches the concept of mediality or corruption on the surface of the piece through notation, later works such as *Synaesthetics* and *Everyone Else But You* seek to implement the model by embedding it within the pre-compositional stages of the piece. In *Synaesthetics*, for example, the notion of mediality is an essential part of the piece's construction: the application is conscious, and not merely the by-product of compositional craft as it is in *The Totality of Number*.

In *Everyone Else But You*, the pure message exists on multiple levels through the simultaneous corruption of both pitch information and linguistic meaning. This is a development of the approach taken to the model in *The Totality of Number*, which took the strings created by the random number generator as the pure message. It could be said that *Everyone Else But You* is a collection of phonemes that are taken from a popular song. It could also be said that 'What Makes You Beautiful' is a popular song that is the arrangement of phonemes in a particular order so that they create some semblance of meaning. However, meaning is a relative term. There is meaning in *Everyone Else But You* on one level as a deconstruction and masking of 'What Makes You Beautiful', but also as an exploration of manifestations of noise. In terms of the latter, *Everyone Else But You* manifests noise that is positive not only on the level that it serves as a commentary for the pop song, but also as a positive corruption of material that reveals something new about the noise models employed.

Noise as mediality is an issue that was treated as equal to noise as overcoming and noise as fragmentation in the initial stages of this project. However, this notion of parity in many ways underestimates the impact that mediality has on the works written, and more broadly on my understanding of noise *qua* noise. Noise as mediality is the second broad model that is discussed in this thesis and does not conform to the external model of noise as an interruption as posited by Shannon. The notion of noise as an interruption is not, however, something that is alien to the concept of mediality. In *After Holmdel* noise is consciously manifested as an interruption in the form of fragmentation. However, in addition to that the use of a noise model, the

composition of *After Holmdel* drew upon a secondary source of inspiration, that is, the CMBR.¹⁷ Whilst the notion of CMBR was useful as a pivot for *After Holmdel*, it is suggestive of the relationship between noise as an external event, and noise in the background. The relationship between noise in the background (mediality) and noise as event (fragmentation in this case) has already been discussed with relation to the work of Serres and Attali. Noise in the background can be understood to occupy a hybrid space, both knowable and not. The idea that noise is a rupture in both Serres and Attali implies a disturbance of that background, and also a relationship between noise as background and noise as event. It seems that the closer one looks at the notion of mediality, the more one discovers that the model itself is inherently multiple, existing within everything, and also containing the other models. In this way, noise might be understood to be related to the Badiouian void which exists as both a framing of being and an integral part.

3.2.5 Mixed model conclusions

The mixing of models in this stage of the project serves two purposes. First, as mentioned at the beginning of this chapter is the nature of interaction, which seeks to interrogate that way in which the models combine: identifying whether models are ‘compatible’ or not. Conclusions drawn from reflection upon the pieces from this section of the project suggest that the models are not only compatible, but that they are inextricably linked to one another. Second, I am able to then turn these observations back on the models to see if it reveals anything about their nature. Methodologically speaking, this is the completion of a cycle: criticism of practice reveals new questions. Some of these issues have been alluded to in the sections previous to this, though I will now draw my findings together.

The mixing of models has highlighted two particular things about the models in and of themselves. First, through an analysis of the compositional processes applied to pieces in this section of the portfolio, it is possible to observe both noise as overcoming and noise as fragmentation occurring within an overarching manifestation of noise as mediality. Second, and partly as a result of the first finding, the status of the pure message is called into question, if one posits that all manifestations of overcoming and fragmentation happen within a process of corruption, then the pure message ceases to exist and is, thus, no longer a useful tool.

¹⁷ See. p. 40.

In *The Totality of Number* the focus of the piece is the combination of noise as mediality and noise as overcoming. The compositional process can be understood through the diagram in figure 3.21 below.

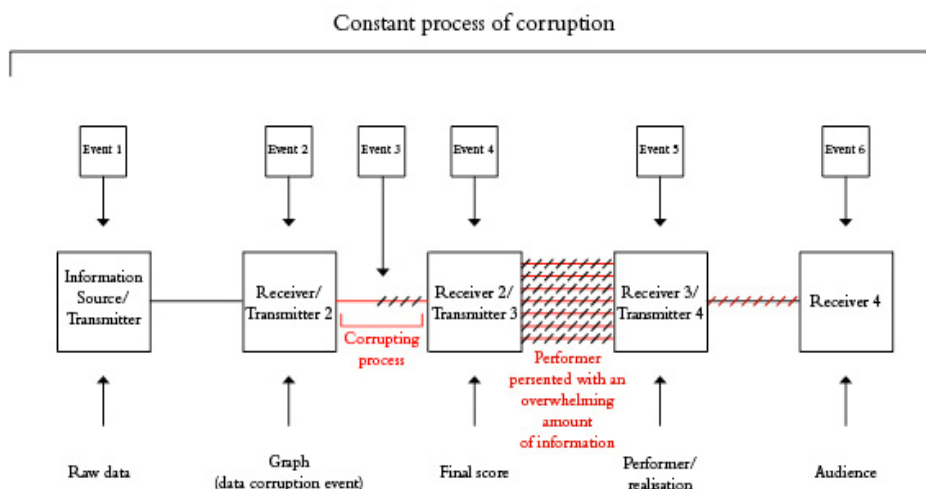


Figure 3.21: analysis of compositional process for *The Totality of Number*

Between events four and five in figure 3.21, there is the simultaneous manifestation of noise as overcoming and noise as mediality. Noise as overcoming is a deliberate manifestation in which the notation is intended to overcome the performer in its approach to decoupling. Noise as mediality is present throughout the piece as the process from material generation to reception is a super-channel in which multiple channels exist. To this end, there is also an event in which two different processes of corruption are present at the same time. At event three there is a deliberate manifestation of noise as mediality through the refinement of the notation that interacts with the corruption that is manifest across the piece as a supermodel. Whilst the supermodel is linear in its conception, there are still simultaneous manifestations of noise models within that superstructure.

In *sur votre*, the models of noise as fragmentation and noise as overcoming are combined.

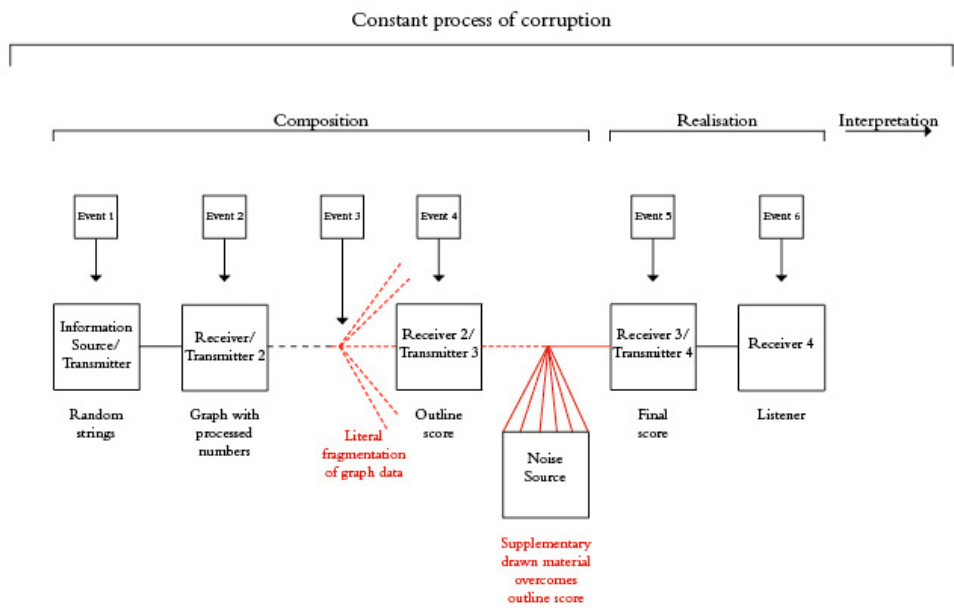


Figure 3.22: analysis of compositional process for *sur votre*

In figure 3.22, between events three and four there is a conscious manifestation of noise as fragmentation that occurs within an overall manifestation of noise as medi-ality. There is also a manifestation of overcoming between events four and five that interacts with noise as mediality in the same way. Noise as mediality in *sur votre*, manifests as an unavoidable consequence of the piece being written, as is the case with all of the pieces to this point. The creation of a digital score that shields the compositional process from the end user presents a situation in which the noise models functioning within the piece are only present to the composer as can be seen in figures 3.23 and 3.24.

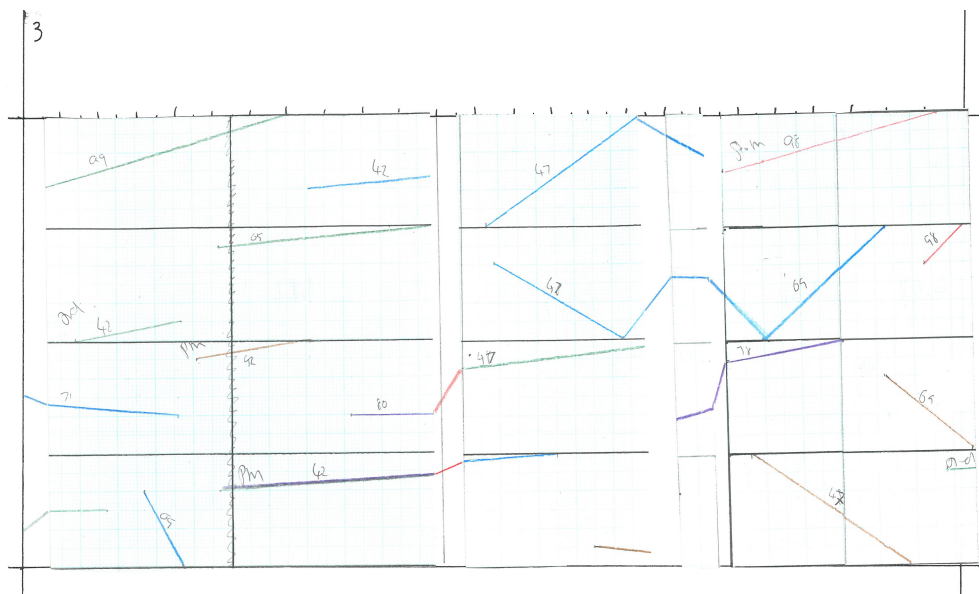


Figure 3.23: *sur votre* outline score 3

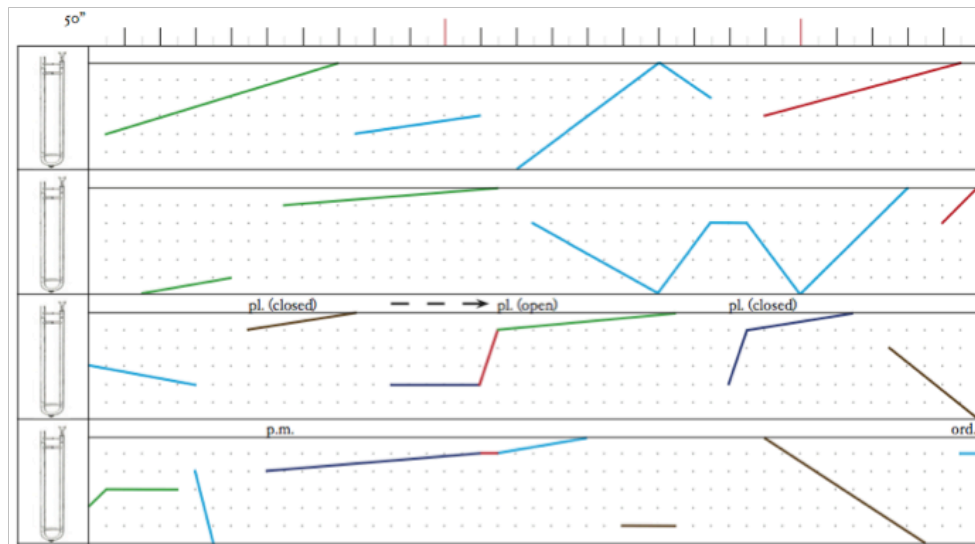


Figure 3.24: *sur votre* digital score p. 3

This example represents a different approach from that taken by other pieces in this section of the portfolio with the exception of *Everyone Else But You*. The movement of noise models from public to private could be seen as the eradication of noise; arguably if only the composer is aware of the noise, then the noise does not exist outside of the composer's head. However, this conclusion is somewhat short-sighted and I would suggest that the opposite is, in fact, true.

Whilst on the surface it seems that the model is shielded, the manifestation of noise within the structure of a noise model is an inherently epistemological way of constructing noise; by situating noise within the boundaries of a model, noise becomes knowable. This epistemic method—the knowable application of models—requires pieces to present the pure message to the performer/audience as a kind of reference point: by presenting the pure message, the model's implementation—and therefore noise—becomes visible. This is especially true of *After Holmdel* in which the pure message is presented in its entirety at the opening of the piece. If, however, noise is presented to the receiver without the possibility of their understanding it as noise, then it becomes unknowable, and therefore closer to noise *qua* noise. The presentation of the pure message in the opening of *After Holmdel* acts as a kind of veneer: by saying that the generated material is the pure message, it acts in the similar way as count-as-one does for Badiou.¹⁸ Whilst the digitisation of the score in *sur votre* may at first appear to be a veneer that eradicates noise, it in fact works to do

¹⁸ Count-as-one is a term used by Badiou to describe a situation in which someone will accept something on a surface level for the purpose of practicality (see p.13).

just the opposite. The digitisation removes the location of the pure message thus making the manifestation of noise unknowable and therefore inherently noisier.

In addition to the act of scratching negatives in *Synaesthetics*, there is another instance in the piece where all three models manifest at once. In the final recording noise as overcoming manifests as a result of the harsh sonic palette, working in much the same way as outlined by Goodman and Voegelin in chapter one. Noise as mediality was consciously implemented through the transposition between formats—visual to sonic—and also through the way in which the negatives were defaced. In addition to these deliberate manifestations, noise as mediality also occurs alongside noise as overcoming through channel between speaker and listener. Noise as fragmentation is deliberately implemented through the cutting up of samples to create the final recorded piece. This instance of noise as fragmentation is still present within the final recording and thus occurs simultaneously with the other two models. This final instance in which all three models occur at once demonstrates that not only do the two external models occur within noise as mediality, but that they can occur simultaneously with each other.

Fundamentally, the issue that relates noise as overcoming and noise as fragmentation is the fact that they manifest within the channel of communication. This is apparent in the model proposed by Shannon. Their occurrence within the channel—rather than at any other fixed point—leads me to conclude that the two external models are, in fact, part of noise as mediality which is to say that the occurrence of a noise is an intrinsic part of noise *qua* noise. With regard to the noise models now, it would seem that the distinctions between the three models falls away and leaves one model—noise as mediality—that is inherently multiple.

Now that the noise models can be understood as a single—though inherently multiple—entity in which external models reside within the overarching notion of noise as mediality, the relevance of the pure message can be questioned. At this point in the project it seems that the usefulness of the pure message as an idea has been exhausted. Whilst it is a suitable tool when viewing the models as a singular entity, the positing of the external models—overcoming and fragmentation—within the model of noise as mediality suggests that the pure message will never be pure owing to noise being an inevitable consequence of communication. This conclusion can be understood in terms of *Everyone Else But You*. Whilst the initial aim in writing this piece was to apply all three models simultaneously, the secondary objective—hiding ‘What Makes You Beautiful’ in plain sight—facilitated their manifestation with little conscious input from myself. The application of noise models in re-

lation to the pure message here seems redundant, and it would appear that the noise models manifest within any message transferred, pure or otherwise.

3.3 Parasite pieces

3.3.1 Introduction

These pieces are, in some ways, a departure from the general curve of the project to the extent that they do not attempt to merely implement the three noise models in the same way as earlier work. At the close of the previous section, it was concluded that all three noise models were present in all of the works all of the time: these models form a model of noise as an ontology and therefore will always be present. As with the pieces from the first section of the portfolio, it now becomes necessary to employ a secondary influence around which to base further work. Because noise as mediality has come to the fore at this stage, I am working with the notion of parasite as understood in Serres. Parasite in this sense is akin to the presence of static, which is to say, background (medial) noise in the system:

Stations and paths together form a system. Points and lines, beings and relations. What is interesting might be the construction of the system, the number and disposition of stations and paths. Or it might be the flow of messages passing through the lines. In other words, a complex system can be formally described (that of Leibniz, for example) and then a system in general. Or, one might have understood what is carried within the system, naming the carrier Hermes. One might have sought the formation and distribution of the lines, paths, and stations, their borders, edges, and forms [...]. There are escapes and losses, obstacles and opacities. Doors and windows close; Hermes might faint or die among us [...]. What travels along the path might be money, gold, or commodities, or even food—in short, material goods [...] there are always interceptors who work very hard to divert what is carried along these paths. Parasitism is the name most often given to these numerous and diverse activities, and I fear that they are the most common thing in the world. (Serres, 2007 [1980], 11).

In *The Parasite*, Serres posits that the parasite is that which lives off of the host. He says that noise—or static, which is to say, background noise—is the ultimate parasite. In the quotation above he talks about the system, which could also be referred to as being. The interceptors could be noise as overcoming and fragmentation, but it is the system of mediality within which these ‘interceptors’ exist.

It is with the above in mind that the project moves towards parasitic works. These pieces are parasitic in the sense that they take material from previous items in the portfolio, and also because they work with all of the models in combination existing as a form of mediality, and this is achieved in two different ways. First, *Steganographica* takes material from *Everyone Else But You* and completely reinvents it to make a piece for a different instrument that sounds nothing like the original work.

Null is a reworking of *The Totality of Number* owing to the fact that *The Totality of Number* works as a piece of research, but largely fails as a piece of music. This re-writing in the form of *Null* for bass flute, is also a completely different piece that uses small pieces of information from *The Totality of Number*. This is a kind of cherry-picking technique, generating a much longer work that is greater than the sum of its parts.

3.3.2 *Steganographica*

Steganography is a technique that was previously employed in *Everyone Else But You* and can be understood as the practice of hiding messages in plain sight, most often in the form of hidden messages in writing. In *Everyone Else But You*: all of the individual phonemes are present at the pitch that they were sung in the original song, but the manipulation of this material over time masks the meaning behind the individual phonemes, and the use of *glissandi* masks the pitch to some extent. *Steganographica* takes this approach to hidden writing in a different direction. The material for *Steganographica* is taken entirely from *Everyone Else But You*, but rather than the piece being built up over time from the collation and dissipation of generated material, these borrowed materials are placed directly into the score.

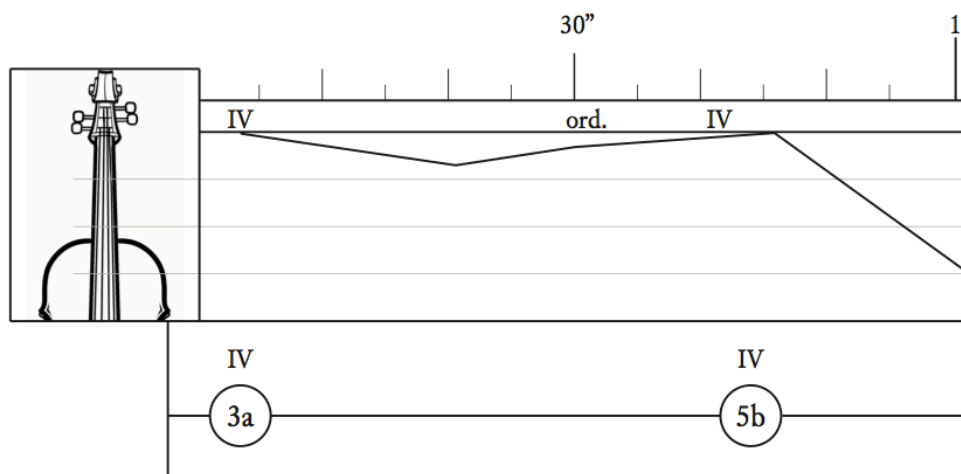


Figure 3.25: *Steganographica* opening

Here the score for the first minute of *Steganographica* clearly demonstrates the way in which the borrowed material has been applied directly. The pitch material—which is made up entirely of the original pitches from ‘What Makes You Beautiful’, rather than the microtonal inflections added to *Everyone Else But You*—is present in the form of natural harmonics, which are achieved by the performer moving around the

nodal points of the cello strings as demonstrated figure 3.26: a chart used in the performance instructions:

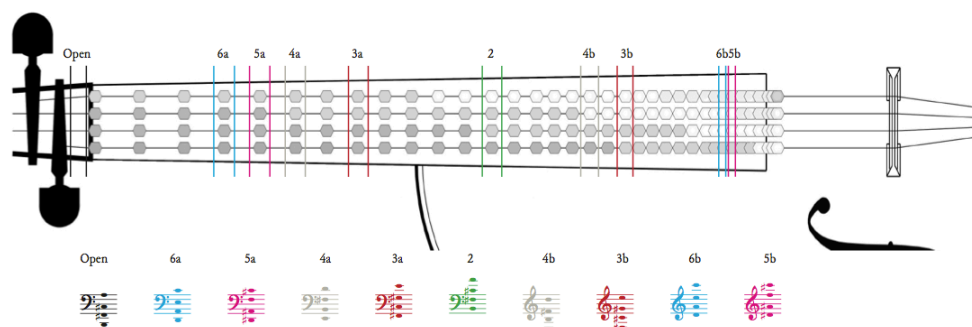


Figure 3.26: *Steganographica* performance instructions

The *glissandi* are present in the form of bow position on the cello neck. This positioning is constantly behind the fingers, which is to say in the same style employed by *Dualities*. The performer is asked to work through the piece whilst maintaining a bow pressure that is consistently just below the level required to create pitch. The only pitches that the performer should allow to sound are the natural harmonics indicated by the numbers in circles (left hand nodal point) on the string indicated by the numeral. These pitches should be allowed to sound until they collapse, or until the right hand is asked to play *ordinario*, indicating that the performer should slowly move across all four strings from IV–I, I–IV etc.

By utilising the material from *Everyone Else But You* in this way, I have created a piece that undoes (or endeavours to undo) the shielding of the pure message that is created in that piece. In *Everyone Else But You*, the *glissandi* are used to mask the pitches from the One Direction song; in *Steganographica* the *glissandi* in the left hand—between nodal points—are used to *reveal* the pitches, which are the same as the pitches from the original One Direction song. The shielding here is undone through the *glissandi*, an irony as *glissandi* are used to shield pitches in *Everyone Else But You*. Whilst revealing the pitch element of the ‘What Makes Your Beautiful’, however, the re-working of this material as a work for solo cello adds another level of masking by removing the words. *Steganographica* is therefore multiple in its approach to the material, simultaneously revealing and shielding it, which is to say, revealing pitch, but removing lyric.

Whilst *Steganographica* is primarily concerned with noise in the form of parasitic material, the three noise models are still clearly at work within the piece. For example, noise as fragmentation is present through the splitting of notational parameters: what functions as a single gesture in *Everyone Else But You*—pitch and *glissan-*

do—is now split into left- and right-hand material in *Steganographica* (pitch—left-hand harmonics, *glissandi*—right-hand bow position). Noise as overcoming is present in the compositional process through the extension and linking of bow position material—taken from the implementation of noise as overcoming in *sur votre*—and the technique of playing behind the fingers, which is taken from *Dualities*.

The implementation of noise as mediality underpins the entire premise of the piece, which is to say that it functions as a corruption of the material in *Everyone Else But You*. This corruption is not negative, however, as new work is created. This is reminiscent of Crocker’s notion that ‘[n]oise, in other words, is to communication what a virus is to an organism [...] It is not simply an obstacle, but rather a productive force around the exclusion of which the system is organised’ (Crocker, 2007). This indicates a shift in the methodology behind the creation of new works. Noise as overcoming and fragmentation can be subsumed by the notion of the channel and can be understood in terms of the pure message.

3.3.3 \emptyset (Null)

\emptyset , or *Null*, is a work for solo bass flute that exists as a parasitic reworking of *The Totality of Number*. The piece came about as the result of a private lesson with Pierluigi Billone in May 2013. The feedback I received from that lesson—in which we discussed *The Totality of Number*—was that it was in many ways too concerned with the process of parametric notation, and not concerned enough with the role of the performer in the piece.¹⁹ *Null* takes four multiphonics that result from an analysis of the notation in *The Totality of Number*. The multiphonics form the basis of an extended investigation into the sonic properties and boundaries of the bass flute. In addition to the investigation of the instruments’ boundaries, *Null* is also concerned with pushing the boundaries of the performer.

The name *Null* has a dual meaning in the context of the piece and the project. Null as a mathematical concept is intimately connected with my formulation of noise as being. This is to say that null, or more specifically, the null set, is a phenomenon that is present both before and after the presence of being as well as within being at every stage. This has been discussed earlier in the thesis in relation to the void present in the structure of an atom, resulting in the fact that matter is more nothing (void) than it is something (matter/being). If one asserts that noise is being,

¹⁹ A more detailed discussion of the issues mentioned here can be found on p. 59.

then noise is defined by void, in the sense that noise can be seen to frame void much like the set $\{\emptyset\}$.²⁰

The other application of the word null (or void) in this piece relates specifically to the performer. The piece is presented in the form of disconnected bars. Each of these ‘bars’ represents a complete expulsion of breath on the part of the performer:

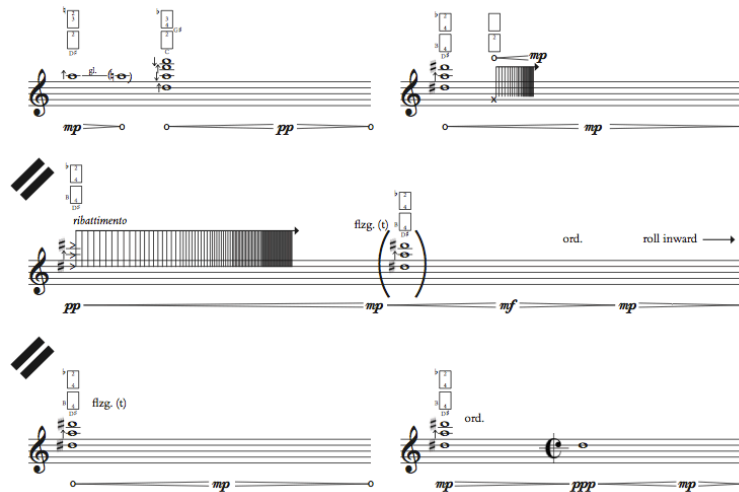


Figure 3.27: *Null*: bb. 8-12 (p.2)

The focus of the piece is the performer’s control and extension of these bar lengths over the course of performance. At the start of the work, the score gives three multiphonics, which the performer may use to ‘warm up’ and focus their breathing.

∅

For Bass Flute Solo

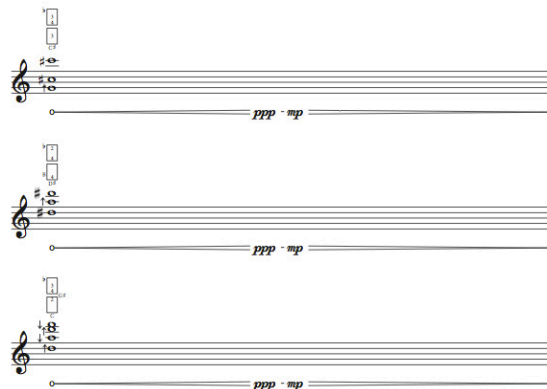


Figure 3.28: *Null*: opening

²⁰ See p. 13.

The three multiphonics can be used as a space in which the performer can focus on developing control over pitch consistency, control over pressure points at which the different pitches of the multiphonic start to sound, and extend the period for which the performer can create sound with the air that is expelled. It is not expected that the note(s) will sound for the duration of the breath/bar. The ambiguity in dynamic can be utilised as a tool for improving control as well as extending duration. However, through working with the piece, the function of the opening changes. Rather than using the space to genuinely extend their breath duration, the performer might use it as a form of preparation, allowing them to focus on the idea of using whole breaths before continuing with the rest of the piece.

Although *Null* exists in direct relation to *The Totality of Number*, it is conceived of as a distinct entity. The differences are mostly present on the surface of the piece, principally found in the notation and overall form. The piece is still concerned with the use of overcoming, though its application is now both physical and psychological. The piece is also fragmented in the sense that the collage technique employed in *sur votre* and *Everyone Else But You* is also used here. The piece is inextricably linked to *The Totality of Number*, but also exists independently of it. In some ways, *Null* is less a new work that is linked to *The Totality of Number*, and is more a companion or reimagining.

Looking back at *The Totality of Number* with reference to the project as a whole, it can be concluded that whilst the work functions as a good example of practical research, it is less successful as a piece of music. This highlights some of the issues that can arise through the use of practice as research. These findings also highlight the shortcomings inherent in the stringent application of noise models to musical pieces. These later pieces, which are indicative of a distancing from this explicit application of models towards other, more abstract manifestations of noise, are a useful route forward from this point.

The technique of parasiting is, I think, a viable avenue for the creation of future works. The two pieces in this section could be analysed in terms of the three models, but I think this process has largely been exhausted. There is little to stop me from taking the parasite pieces and parasiting them to create more works. I could create a ‘pandemic’ catalogue of works that stem from a single earlier piece. The inevitability of noise manifesting within pieces, whilst not explicitly taking a model-

based approach implies that the manifestation of noise is something inherent in the production of music. Indeed, if music is conceived of as communication, then noise can be viewed as an inevitable consequence of the channel in which that music is made. The intertwining of noise and communication is suggestive of noise being important on a broader level, that is, that one might understand being—or, specifically, the spaces between nodes in being—as functioning like an infinitely large, inconsistently multiple, channel. This is reminiscent of Deleuze’s description of the fold, particularly the notion that ‘[t]he unit of matter, the smallest element of the labyrinth is the fold, not the point, which is never a part, but a simple extremity of the line’ (Deleuze, 2006 [1988], 6). Here Deleuze states that the focus of the cloth—itself a metaphor for being—is the fold rather than the point, which is to say that it is the space between points that is important. The importance of relationships is also central to Badiou’s mathematical approach, which takes set theory—the study of relationships between mathematical objects—as its focus.²¹ The importance of channels, which is to say, relationships between points or objects, suggests that noise functions in a very similar way to being *qua* ontology.

3.4 Inconsistent multiplicities

The portfolio element of this project has, thus far, moved through three distinct phases. The first involved models in isolation and made use of secondary influences, which is to say the use of CMBR and particle-wave duality. This stage revealed that the models conceived as an external event were relatively simple to manifest, though the notion of noise as mediality was more complex. The second stage mixed models in a controlled manner and sought to investigate how those models reacted with each other when mixed. This stage prompted the conclusions that the event-based models existed within the notion of mediality, thus creating a model that is both single and inherently multiple. Because of this finding, the concept of the pure message was discarded as an influence for future work as all messages are now considered inherently corrupt due to the nature of the channel. Finally, the parasite pieces returned to the use of secondary influences, but this time the influences came from elements of earlier works.

Whilst these stages demonstrate distinct developments at each step, they have all yielded pieces that are inherently knowable. By this, I mean that the pieces exist within single spaces and occur during a single, linear period of time. To use a

²¹ See p. 11.

Badiouian term, this would be akin to a consistent multiplicity, which is to say, much like the notion of countable infinity, an ontological concept that is limited to the constraints of human knowledge and experience. To this end, it might be understood as an episto-ontological phenomenon. This final section of the portfolio is no longer explicitly concerned with the notion of manifesting noise at all, not because noise is no longer the focus, but because its manifestation is inevitable. Rather than being concerned with the intricacies of noise as manifestation, this section moves towards a focus on format, specifically the concept of non-linear, and multi-space experience. As previous works can be understood as consistent multiplicities, this section will deal with representations of inconsistent multiplicity, which is to say, a piece that is singular in its identity as a work, but is inherently multiple in performance. The result of these conditions is the multi-room immersive performance *AfterMath{s}*.

3.5 *AfterMath{s}*

AfterMath{s} is, like the parasite works, a departure from the way in which pieces in the project have been written to this point. Rather than existing—as one might expect of a piece of music—as a single, linear, experience, *AfterMath{s}* utilises multiple spaces, asking both performers and audience members to move between rooms. The smaller, linear works, that precede *AfterMath{s}* are, ontologically speaking, inherently knowable, whilst the structural nature of *AfterMath{s}* renders it inherently unknowable, as I will outline below. The piece comprises three spaces and eight performers. The performers are each given a timetable and move between the spaces following clocks that are projected onto the wall of each space.²² Audience members are also given individual timetables that they follow independently of both performers and other audience members. The total length of the piece is two hours, but each participant's experience is fractured into different sized 'micro-pieces'.

The title *AfterMath{s}* can be understood to have a double meaning. First, it is the final piece of the portfolio and—as it is so drastically different from the other pieces included—serves as a form of commentary, a kind of aftermath. Second, the title ties the portfolio back to theories surrounding Badiou's ontology. Badiou asserts that truth is dependent upon the intersection of philosophy with truth condi-

²² There are gaps of one or two minutes between the times when performers/audience members enter a new space. The purpose of the gaps is to ensure that participants remain 'on schedule' and to accommodate for performances that are very busy. There is a holding space in which participants may wait until it is time to move into one of the rooms.

tions.²³ *Being and Event* is Badiou's study of mathematics—one of the four conditions—as ontology. This relates to my own assertion that noise—or specifically the intersection of music and noise with philosophical reflection—is intrinsically concerned with being. With reference to Badiou's maths as ontology, my approach to noise as ontology is quite literally after (Badiou's) maths, the curly brackets in the title referring to the empty set $\{\emptyset\}$. To successfully create a piece that is inherently unknowable in the way defined by Badiou required a drastic departure from my current format.²⁴ Previous works have taken the form of somewhat traditional solo or small chamber pieces that work in a concert hall setting. *AfterMath{s}* functions in an entirely different way, using multiple spaces, and multiple interpretations of time. The performers move between the three spaces at intervals dictated by me to create a structurally fixed, but musically dynamic performance environment.

For the performance documented as part of this project, the space was a two-storey Victorian villa situated on the University of Leeds campus. I chose the three spaces within that house—there were other spaces in the building that I could have used—because each of the rooms had distinctly different sonic properties. Room 1 had no windows—and therefore no glass—and a false ceiling. This created a space that was far less reverberant than the others in the building. Room 1 also had an archway rather than a door, but owing to the deadness of the room, very little sound passed through the archway into the waiting area next door (see figure 3.29). Room 2 had a much higher ceiling and two large windows creating a more resonant space. Room 3 is, in fact, half of a much larger room that is split by a chimneybreast in the middle. This—along with speaker placement—created a space in which sound was sent down the length of the room, and then bounced off the back wall to be projected back into the active space through the archways on either side of the chimneybreast. This had the effect of reflected sound in 'stereo' for audience members (see figure 3.30).

The sonic qualities of the rooms also informed my placement of large percussion instruments, which is to say that I placed the membraphonic instrument (a large bass drum) in the dead space to accentuate the feeling of attack, and the vibraphone in a reverberant space to accentuate the use of longer, occasionally bowed notes. An Audio Technica 4050 condenser microphone was suspended in each room and set to 'omnidirectional', so as to pick up much of the sound in the room itself. In addition to these room microphones, each performer had a radio micro-

²³ See p. 8.

²⁴ By 'unknowable' I mean inconsistently multiple.

phone attached to their person or instrument. This meant that I had access to live inputs of each room (static/fixed-position room microphones) as well as each individual performer (dynamic/moving radio microphones).

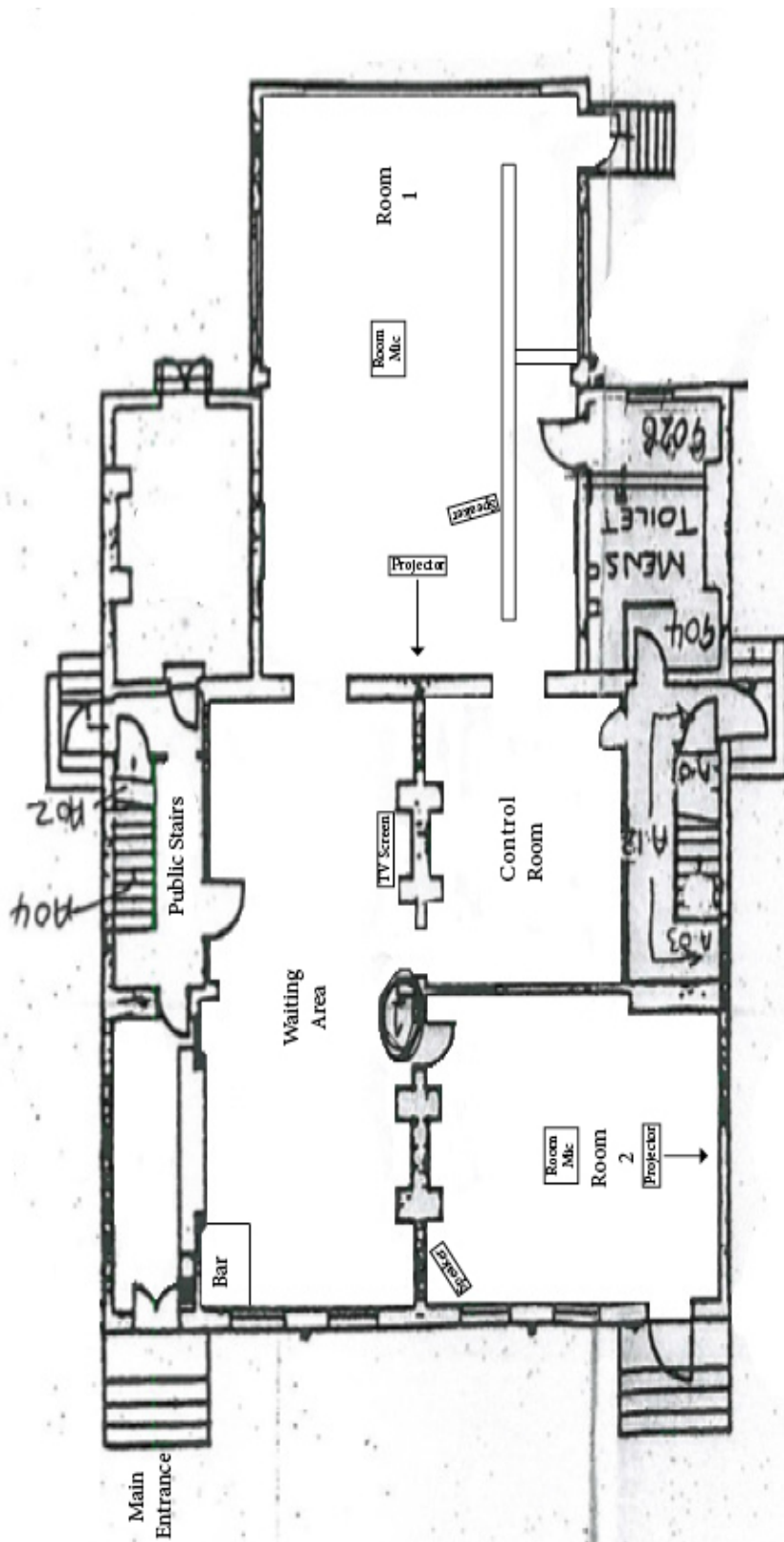


Figure 3.29: *AfterMath{s}* venue floor plan: ground floor

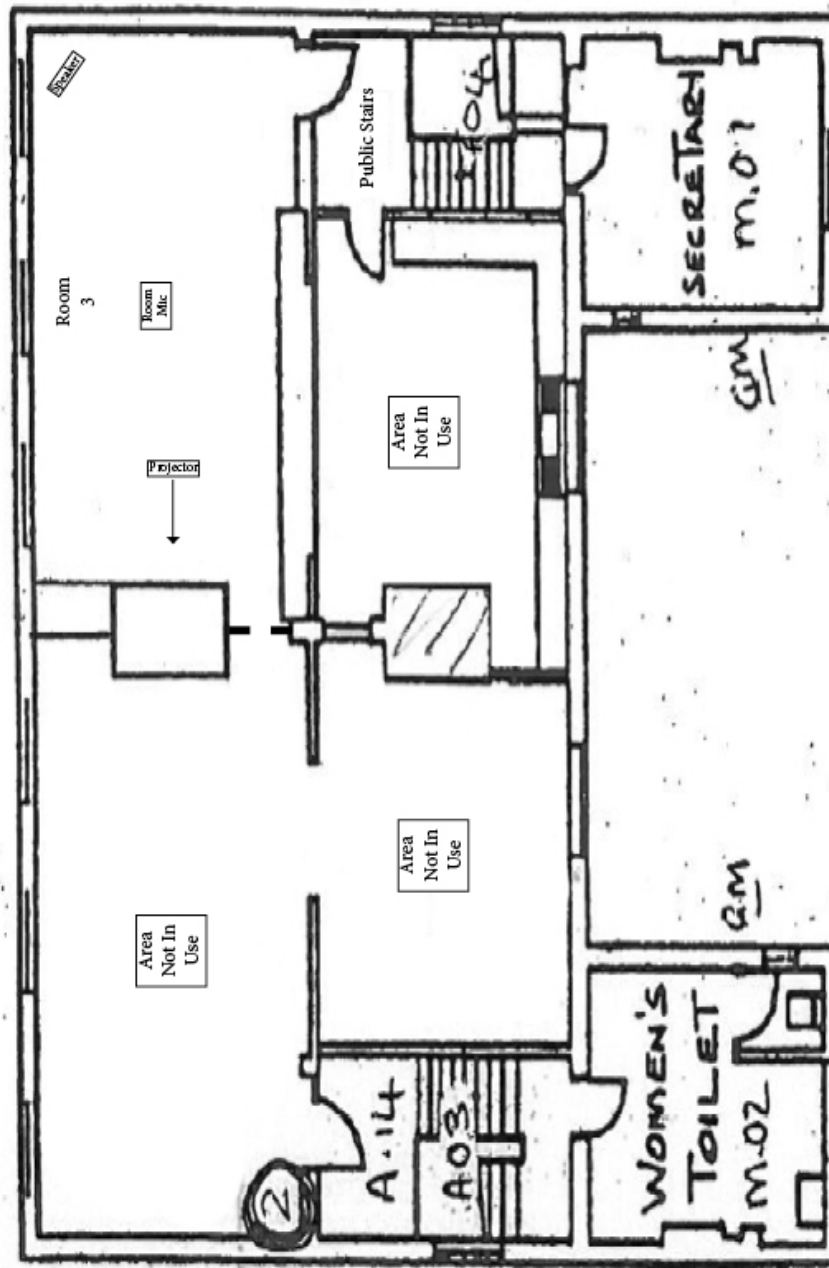


Figure 3.29: *AfterMath{s}* venue floor plan: ground floor

Each line was then routed back to the desk (room microphones) or to a radio receiver and then the desk (performer microphones) before being sent to a computer via a MOTU interface. The diffusion of sound was then dealt with using a patch created in *Max/MSP* before being sent back through the interface to the desk, and then from the desk to the three speakers (one per room). The desk was used to make minor changes to individual levels during the performance and for preamplification, compression, and equalisation. The desk was also used to monitor outputs during the performance as it allowed me to isolate individual performers, buffers, and rooms without affecting audience experience.

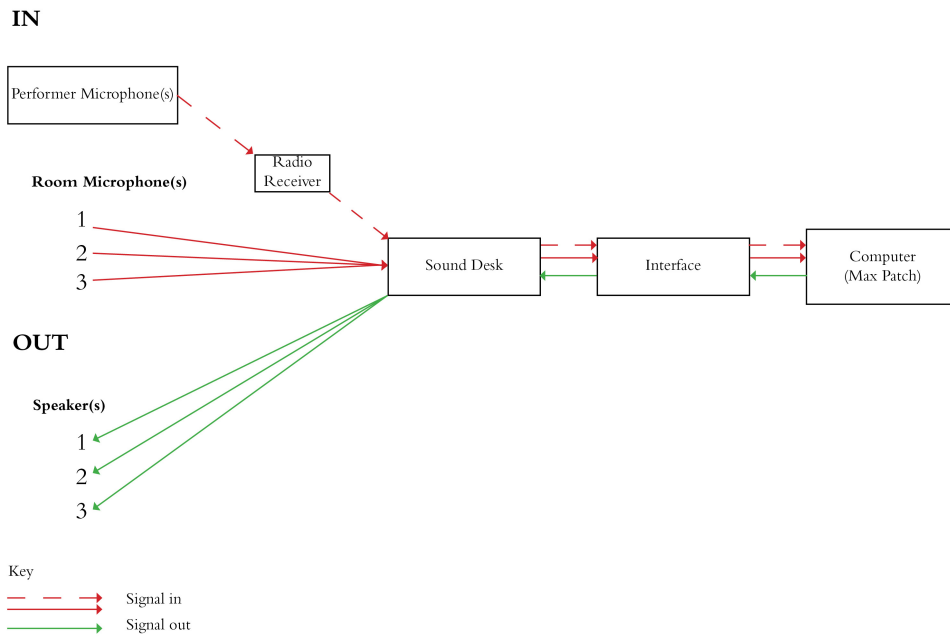


Figure 3.31: *AfterMath{s}* signal routing

The use of radio microphones for performers was an important technical choice that affected the musical outcome. The other option available would have been the placement of static microphones within each of the three spaces—in addition to the room microphones—which the performers could choose to play into directly, or not. By using radio microphones attached to each performer, I was able to factor in their movements within the spaces as a parameter for diffusion. This approach has two benefits. First, I was able to make sure that no input was being output from the space in which it was situated. This meant that the performers were able to stand wherever they liked in each space without the fear of creating feedback. Second, it allowed me to create a series of ‘ghost performers’, that is to say that each performer was followed around by the ‘ghost’ of another in the form of a live output, therefore increasing the number of live outputs in each space. For example, one of the percussionists may have had the cellist as their ‘ghost’, meaning that wherever that percussionist was playing live, the cellist would be being routed live through the speaker in the room. Figure 3.32 shows each input with its ‘ghost’, demonstrating that inputs ‘8’ and ‘1’, for example are never in the same space at the same time. Wherever ‘8’ goes in real time, they are followed by the live feed of ‘1’, effectively doubling the number of performers in the piece, and increasing the number of sounds for the performers to react to in the text scores.

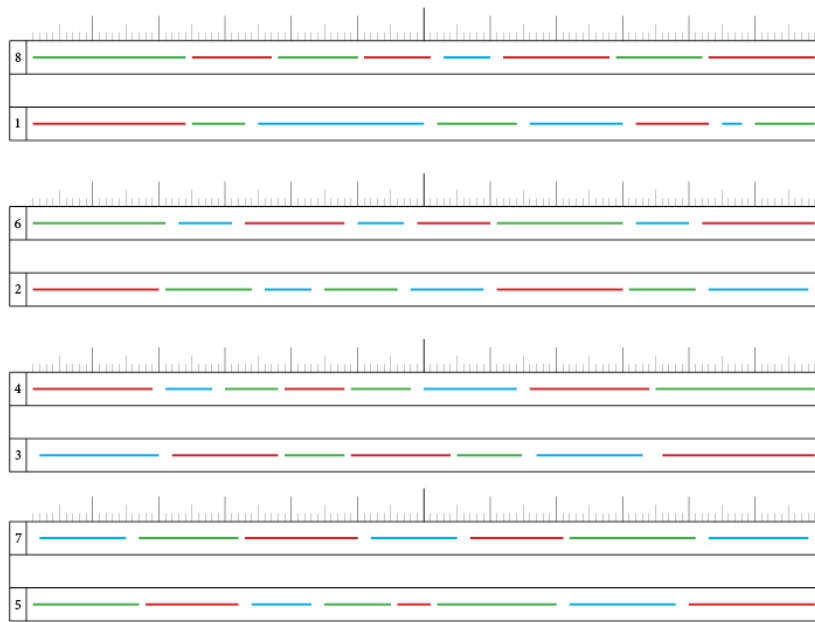


Figure 3.32: *AfterMath*{*s*} 'ghost' structure

The use of text scores is also an important aspect of *AfterMath*{*s*}, benefiting the piece in three ways. First, the use of text allows for an open approach to instrumentation: the scores do not ask the performers to do anything that would restrict them to a particular instrument or group. Second, the texts are adaptable so that a performer may enter a space at any point during the duration of the piece—though performers work on a timetable—and immediately perform. Finally, the use of text allows for multiple sonic outcomes in a way that is not possible with other notations as performers are not restricted to particular pitches, durations, or other parameters that may be otherwise fixed. The flexibility that is made possible by the use of text allows for the foregrounding of the piece's format, which is to say, the movement of the performers and audience members within the three spaces such that no definitive version of the piece exists.

Whilst the conception and much of the execution of *AfterMath*{*s*} is entirely my work, the patch in *Max/MSP* was written by Chris O'Connor, an MMus music technology student. This means that to some extent, the *AfterMath*{*s*} patch must be viewed as a kind of collaboration. However, throughout the patching process, I retained absolute editorial control. This is therefore a different kind of collaboration in comparison to other works in this project.²⁵ The collaborative nature of this relationship between composer and technician is similar to the relationship between Luigi Nono and Hans Peter Haller at Experimentalstudio in Freiburg.²⁶ It might

²⁵ See *Synaesthetics* in which the photographic element (*Negative Terrain*) of the project was a traditional collaboration, and the resulting musical work was purely my own.

²⁶ See 'Homepage', *Website Hans Peter Haller (1929-2006)*

also be comparable to Pierre Boulez's work with IRCAM, an institution conceived by Boulez at the instruction of Georges Pompidou in 1970. At IRCAM Boulez was able to bring composers together with the best performers and computer musicians, something that Georgina Born notes came as a result of Boulez's dissatisfaction at working with both Pierre Schaeffer and the *Groupe de recherches musicales* (GRM) in the 1950s and 1960s.²⁷ For the sake of clarity and transparency, I have included a work plan below, outlining my requirements for the patch, and Chris's subsequent implementation of those instructions in *Max/MSP*. I have also included numerous images (figures 3.33–41), which illustrate the commands highlighted in the right hand column of the table. Crucially, I am the sole author of the code that controls the diffusion of the outputs (see figure 3.38), without which the patch would not function, as the outputs would not be diffused.

<<http://www.hp-haller.homepage.t-online.de>> [Accessed 27/01/14].

²⁷ Georgina Born, *Rationalizing Culture: IRCAM, Boulez, and the Institutionalization of the Musical Avant-Garde* (London: University of California Press, 1995).

My instruction	Technician implementation
Set up a series of controls that allow eleven inputs to be output to three different spaces in real time.	By using the [adc~] object to access the inputs from the MOTU Ultralite, the eleven inputs are sent around the patch using the send~ objects. When routing the signal out, the signal from a [receive~] object was routed through a [*~] object to change the amplitude of the signal, which was controlled by a multislidder object. Three multisliders (each with 11 faders), allowed for the mixing of all eleven inputs to each of the three outputs in a simple GUI. The mix from each of these multisliders and [*~] objects was sent to the [dac~] object to be sent back out through the interface. [See figures 3.33 and 3.34]
Set up a series of controls that allow the eleven inputs to be buffered (recorded) for a set period, then overdubbed and set into loops.	The loop patcher is a delay system utilising [tapin~] and [tapout~], which used a [timer] object to control when live signal is allowed into the delay. The delay is then fed back into the system at 100% amplitude to create an infinite loop system. [See figures 3.35 and 3.36]
All of these controls should be able to be operated manually using a simple GUI incorporating sliders	The multislidder objects sent out a value of 0-1 to the [*~] object. [See figure 3.37]
Create a system that allows diffusion to be hard-coded into the patch.	By designing data files in the [coll] object in a specific way, the current minute of the piece could be sent to the coll object and return the values from the line of the data the minute matches. [See figure 3.38]
Build a timer into the patch that will act as a control monitor for the piece. The code should be work with the timer so that a line of code is activated in the output levels for the dry and looped inputs at the appropriate minute.	By using a timer object that interfaces with the coll object to return values from a line of data matching the minute on the timer. [See figures 3.39, 3.40, and 3.41]
It should be possible to restart this timer at any point (in case of software/hardware failure), and this should cause the inputs/outputs to move to the appropriate levels for that point (according to the code mentioned above).	The timer patch uses message boxes that can be sent values, i.e. set the time, and then continue incrementing from that value [See figures. 3.39, 3.40, and 3.41]
Using jitter or some other visual tool, create a sub-patch that allows the time to be output to AV devices using the miniport out (miniport to VGA). Before the timer starts and after it ends, the visual output should read 'AfterMath{s}'.	Using the jit.gl.3dtext object, I created 3D text, and used the timer information to set the text accordingly. When the piece has ended, or been restarted, the patch automatically sends the message (text AfterMath{s}) to the jit.gl.3Dtext object. [See figure 3.40]
Create a patch that allows a different background sounds to be played into each room for the duration of the piece. The patch should allow the file to be looped, but should stop playing the tracks when the piece ends. The output level of these sounds should have independent controls.	Used the [sfplay~] object for the playback, the playbar object for the looping and playback control, and sent the messages "0" or "1" to stop or start the sound accordingly. [See figure 3.41]

Table 2: composer/technician work-share chart



Figure 3.33: *AfterMath*_s; complete patch

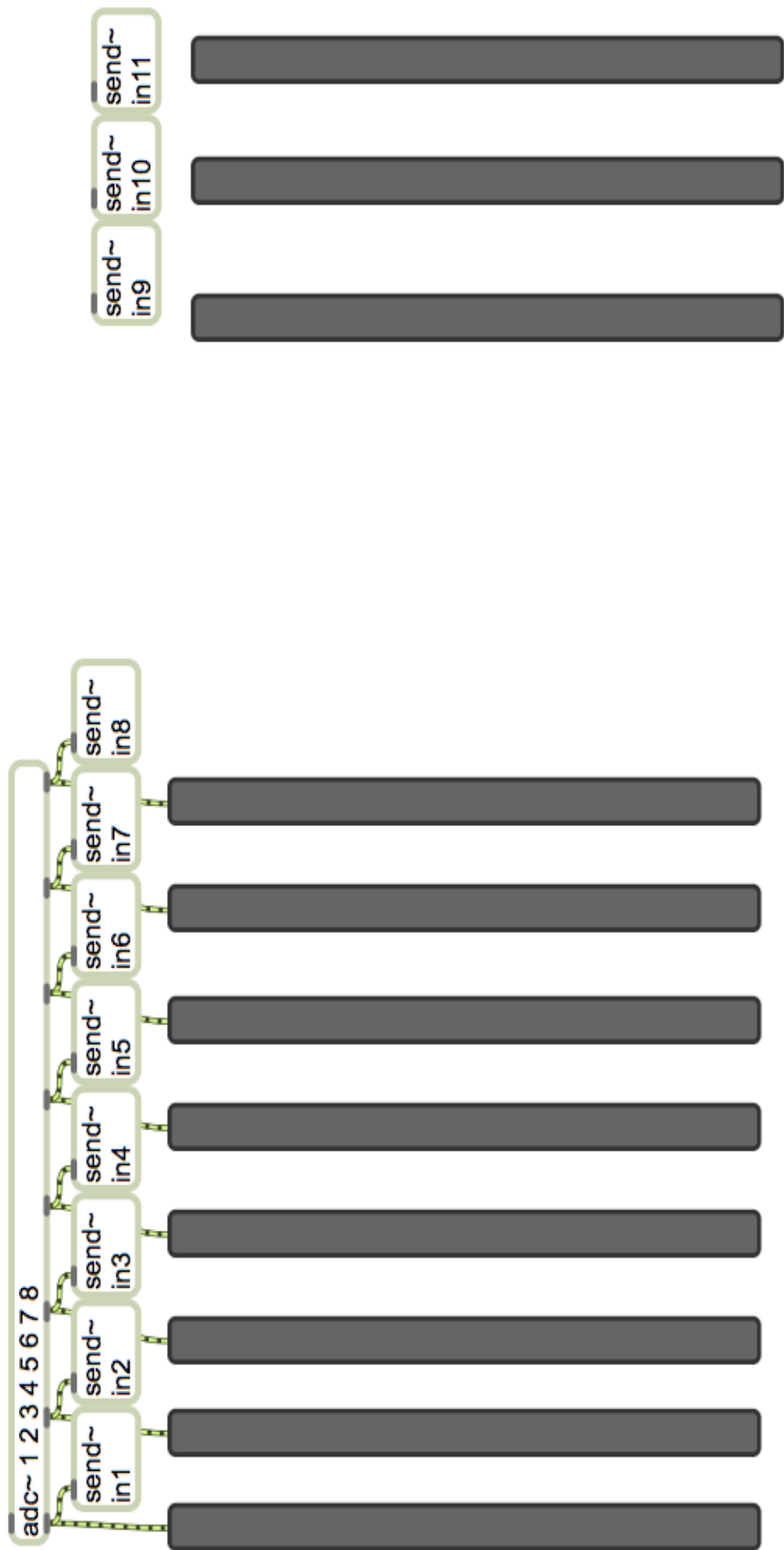


Figure 3.34: *AfterMath*{s}; output levels

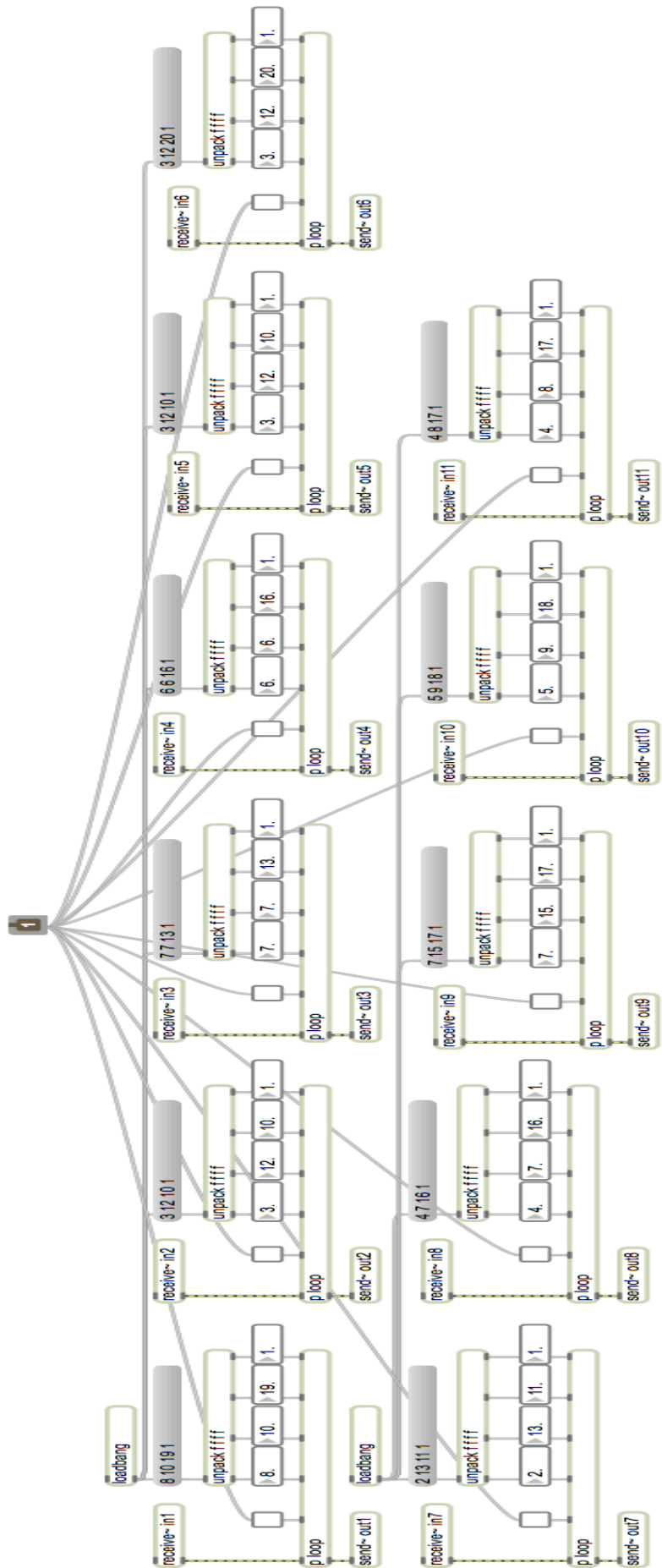
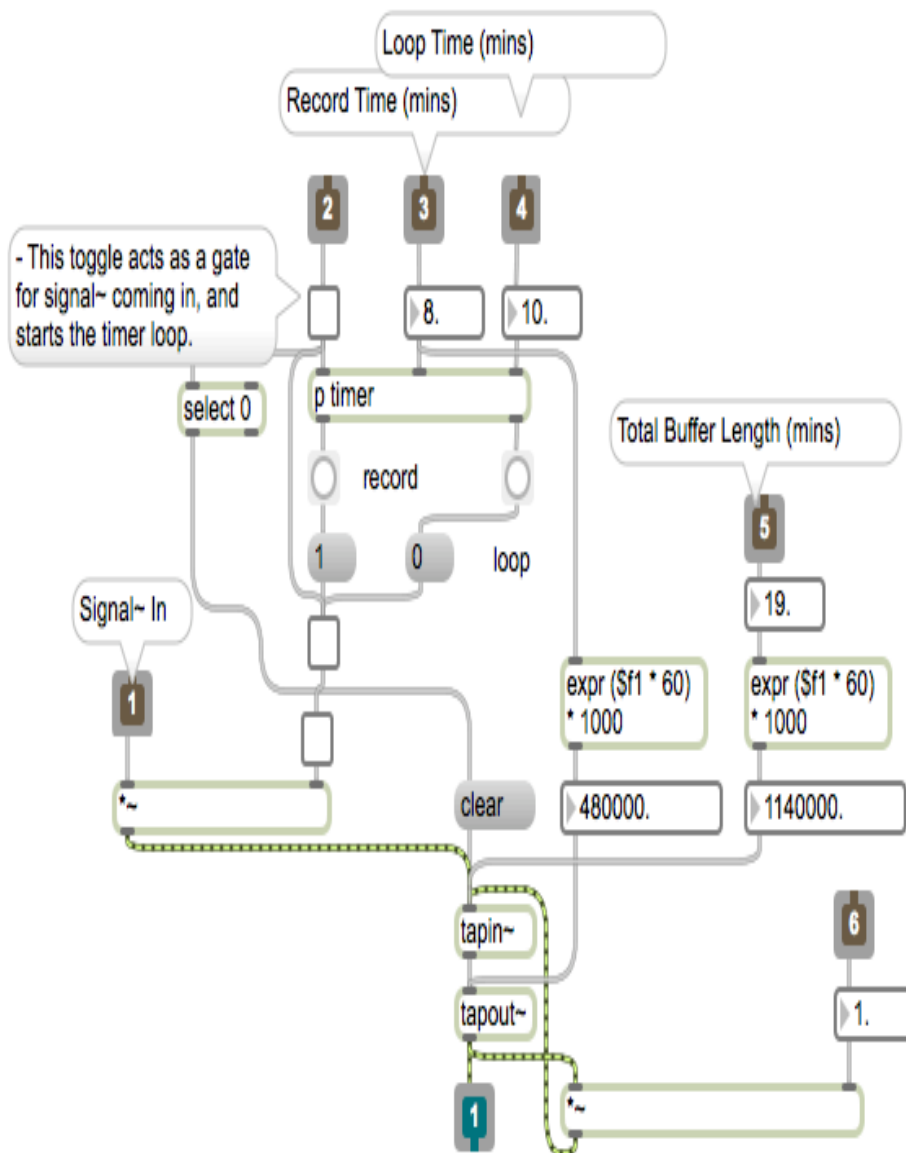


Figure 3.35: *AfterMath{s}*: loop controls



The first `tapin~` creates the full-sized buffer, and the signal is recorded into it for the allocated time.

Then it is "tapped out" after the recording stops, and loops the recording by feeding it back into the `tapin~` object.

The timer then controls a gate which allows the "fresh" signal to be recorded into the `tapin~` object again.

Figure 3.36: *AfterMath{s}*: loop control sub-patch

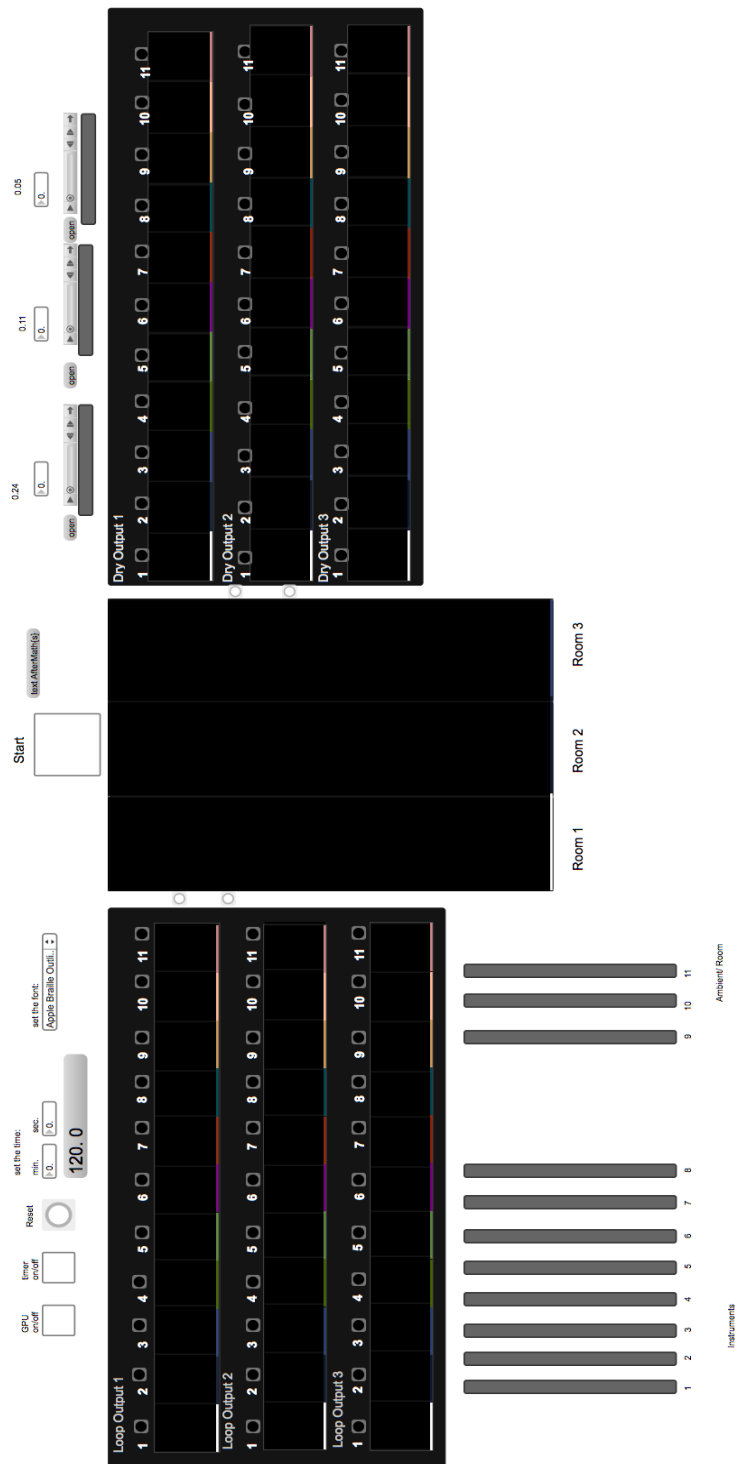


Figure 3.37: *AfterMath{s}*: GUI

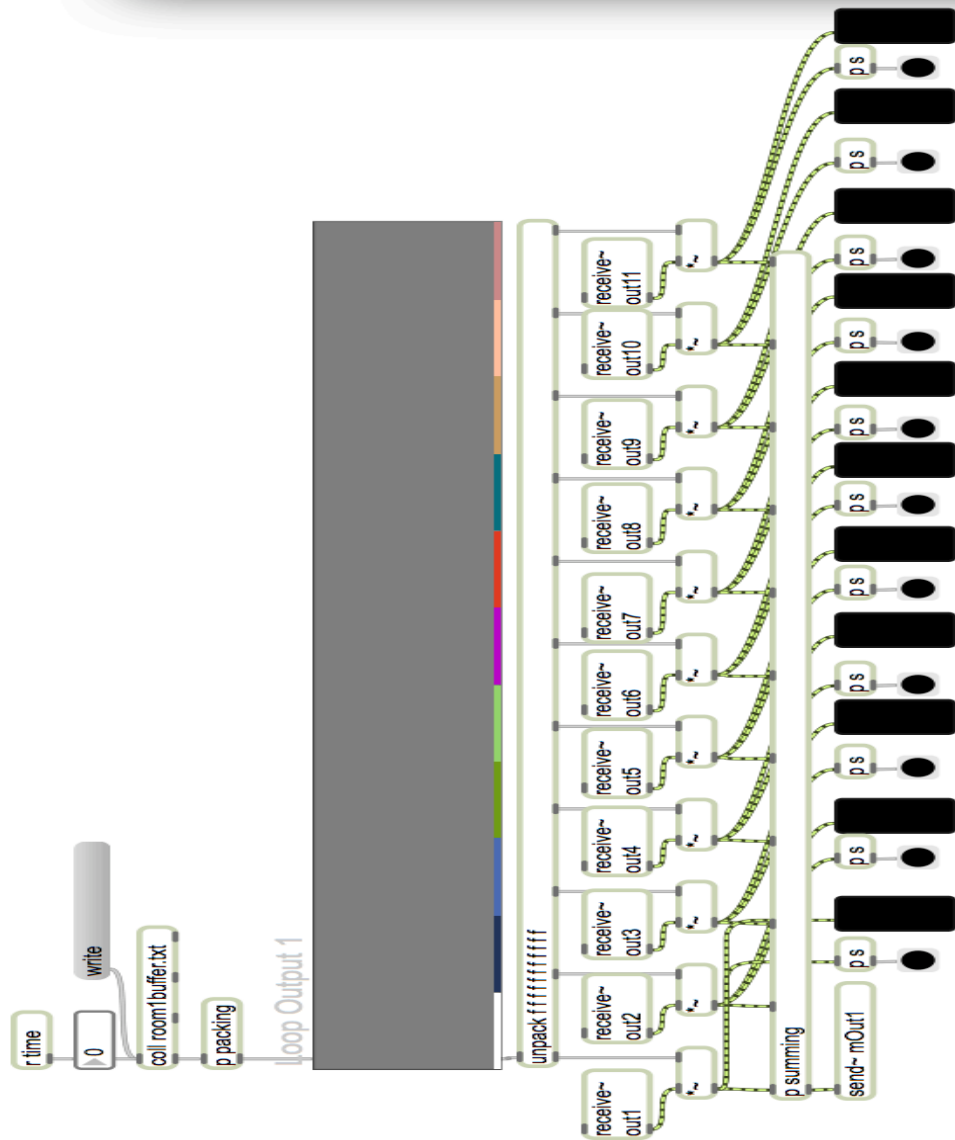


Figure 3.38: *AfterMath*{s}: room buffers (NB: code visible at top of figure)

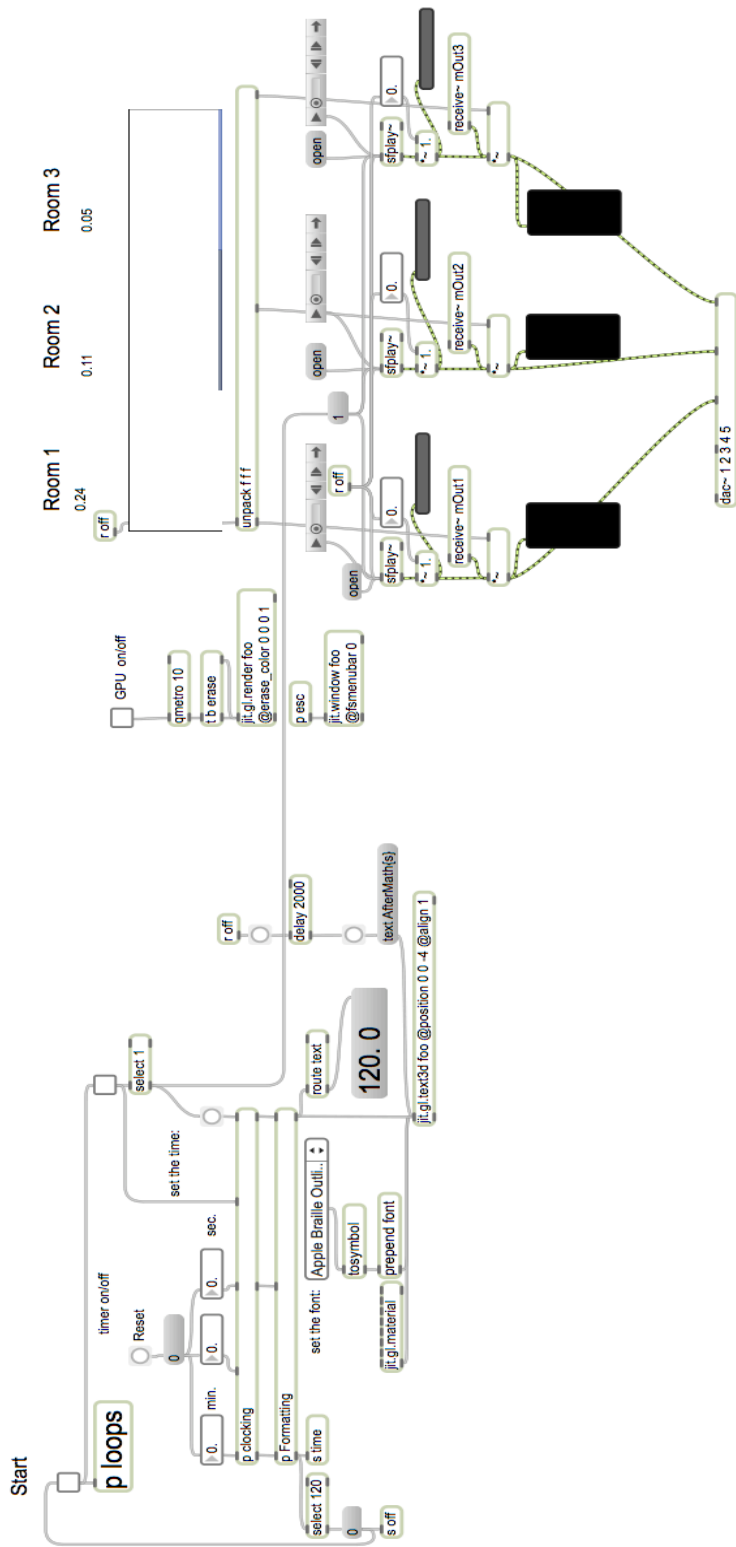


Figure 3.39: *AfterMath{s}*: timer and room levels

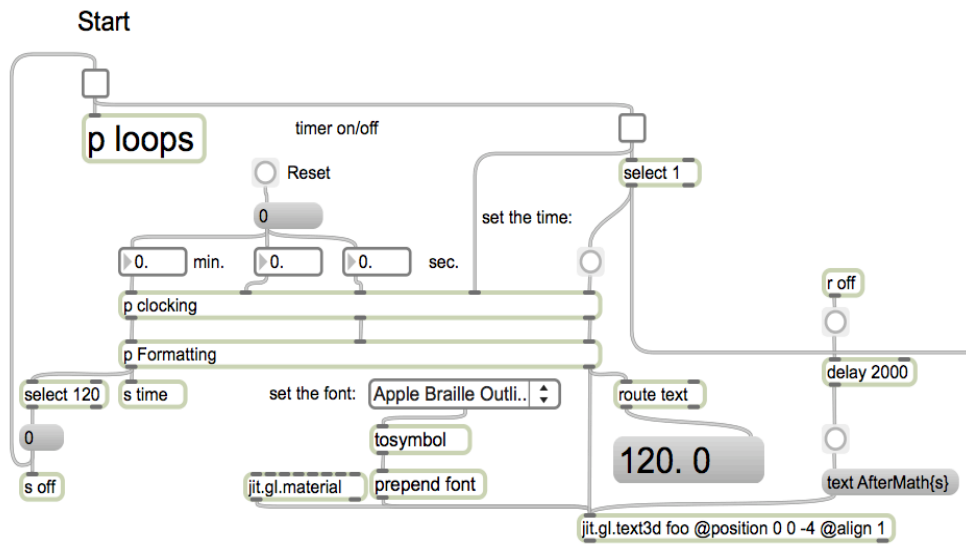


Figure 3.40: *AfterMath{s}*: timer detail

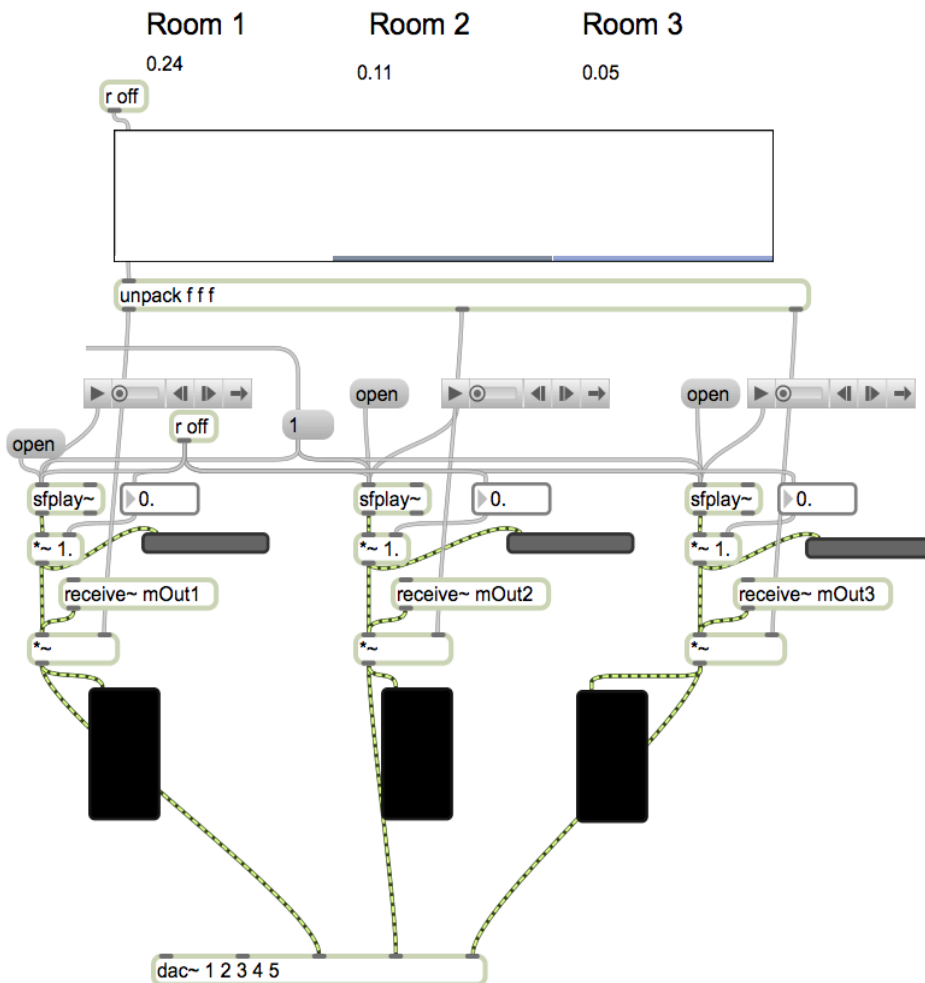


Figure 3.41: *AfterMath{s}*: room levels detail

Whilst the patch may seem like a complicated series of instructions, its purpose is really very simple: take inputs and send them to one of three outputs at various volume levels at certain times that are hard-coded into the patch (see figure 3.42). This code complies with a master diffusion score that I created as part of the composition process:

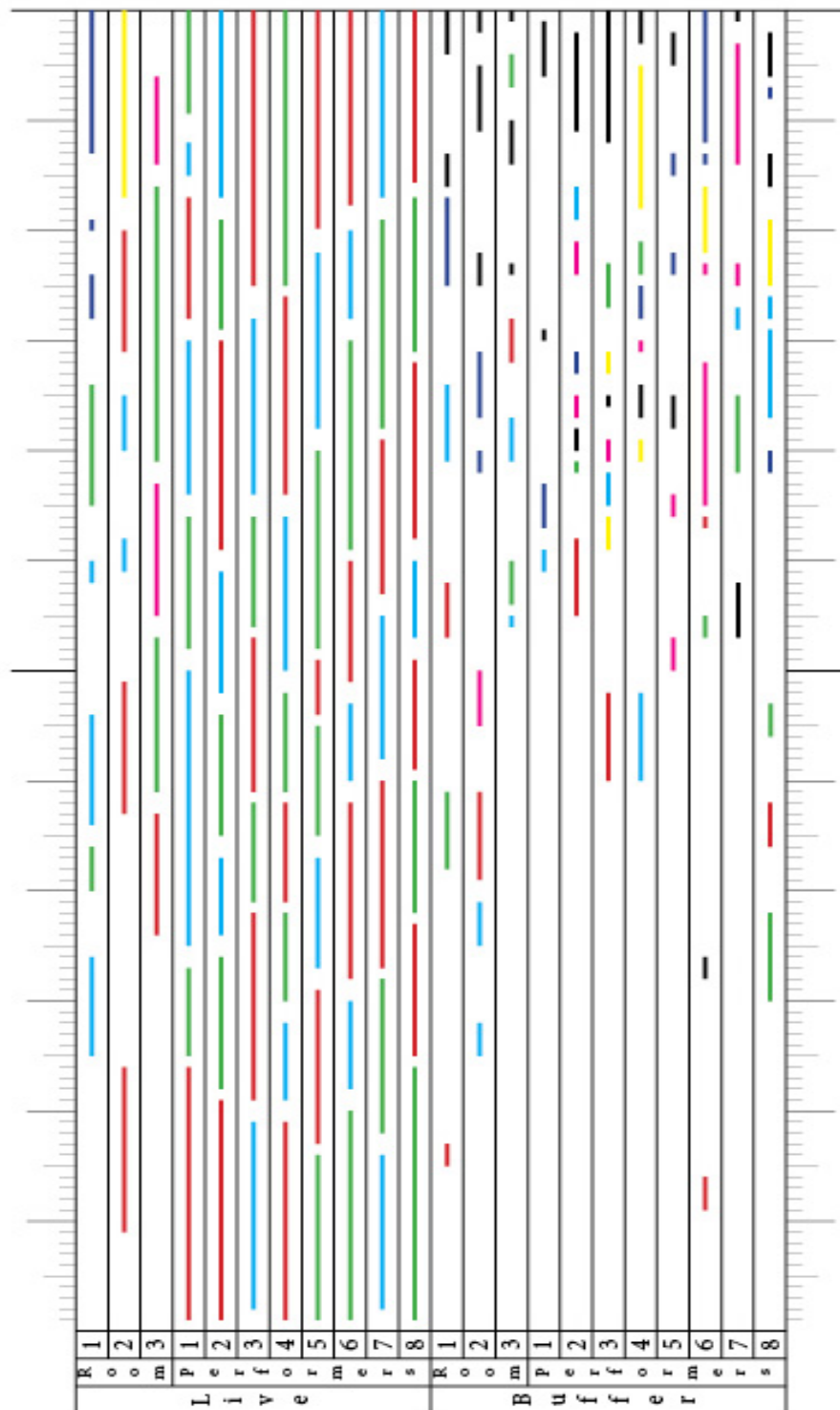


Figure 3.42: *AfterMath{s}*: diffusion structure

In addition to the notion of unknowability inherent in the form of *AfterMath*{s}, noise also manifests within the piece during performance in the form of ‘micro-events’. By reacting dynamically to the other players in the spaces as the text scores dictate, the performers act as external sources of noise—as understood by Shannon—upon each other. The signals created by the performers work this way in real time, and also across time-space owing to the accumulation of looped material. Indeed, because of the looped material, it is possible—and, in fact, highly likely—that a performer will either act as a source of noise upon an old signal being replayed, or be overcome by a replayed signal that is louder than them. To return briefly to models of noise, this interaction—live to live, and recorded to live/recorded—can be understood as the manifestation of both noise as overcoming and fragmentation. The performers may work in a particular room during a certain part of the work, but the sounds that they are making may be re-routed through the system into another room through a speaker. If, for example, the trombone is in room 2, but is being output in room 1, then the trombone may drown out the sound of the alto flute that is playing live in room 1. Several audience members commented that they could not hear the alto flute during the piece, however, from my walking around the space I was able to identify instances when the live output from the alto flute was quite audible in a space that was not physically occupied by the flautist.²⁸ In addition to the live outputs, looped outputs were also played back into spaces after they had been recorded. It would be therefore entirely possible that a performer might be sonically overwhelmed by their own playing from earlier in the piece.

However, because this interaction is engineered into the structure of the piece as a deliberate consequence of performance, this overcoming/fragmentation can also be understood as medial noise. The medial noise at work here is generative, however, as new material is formed from the destruction of live/recorded sound through the creation of new buffered material. The creation of new material then moves the sonic landscape of the piece forward in the form of sonic accumulation. Noise working in this way is indicative of a situation in which noise can be understood to be an integral part of the ontology of *AfterMath*{s}. This is a large step forward from earlier pieces in which each manifestation of noise is either premeditated, and to some extent ‘staged’, or is spontaneous, and therefore accidental. In *AfterMath*{s}, there are neither staged nor spontaneous manifestations as such, but rather the creation of a space in which noise will manifest in a particular way. The ap-

²⁸ See, for instance, 9:07 on the accompanying video.

proach to noise here is unknowable in a different way from earlier works because of this, which is to say that noise is left to occur rather than being prepared.

There is also a sense of overcoming during the last minute of the piece, in which the performers stop playing and return to the holding/bar area. The patch, however, continues to run, playing looped outputs back into the three spaces until the timer gets to one hundred and twenty minutes. To this end, the patch—the non-human performer—overcomes the living performers and dominates the space, making them audience members in much the same way as a Noise Music performance. This situation could also be seen as the performers and listeners being overwhelmed by earlier and multiple—due to the recording and overdubbing/looping of the sound of the performers multiple times over the length of the piece—versions of themselves. This manifestation of overcoming is distinct from the multiple instances mentioned earlier in this section. At this point both performers and audience members are passive and so their overcoming is akin to that of a spectator at a Noise Music performance.²⁹

The piece also has ties to collage (see figure 3.42), especially to the work of Kurt Schwitters and merz collage.³⁰ This is also linked to the collage approach taken in *sur votre*, *Everyone Else But You*, and *Null*. Whilst it may be tempting to see the piece as an unstructured build-up of sonic waste, the structure is carefully defined and hard-coded into the *Max* patch. A good example of this structure coming to the fore is at the seventy-five-minute mark where a significant amount of material is cut from room 1.³¹ The cut does not represent the creation of a deliberate event on my part, nor was I aware that a cut at that point would have a deliberate sonic consequence during realisation. However, the presence of the cut—it happened in each performance—does expose the structure that is present under the surface of the piece. Though most likely not palpable through a single viewing, upon multiple inspections—or even multiple attendances of a performance—the cut comes to represent an exposure of that underlying structure, indicating that the piece is not simply an overwhelming build-up of sound.

By giving each audience member an individual set of times, every person is present in her own version of the piece. Whilst some audience members may spend considerable periods of time in a room with the same audience member(s) or performer(s), there will always be a point at which they will go their separate ways. Owing to the nature of the text scores and the open instrumentation, even audience

²⁹ See fig 1.7 on p. 21.

³⁰ Schwitters's merz collages are works assembled from rubbish and cuttings from other texts. See p. 42.

³¹ See 13:35-13:50 of *AfterMath{s}* video.

members who follow the same path on different nights will have a different experience. Of the three performances of *AfterMath{s}* that took place—two of which are presented in the documentary footage—there is no single instance, other than the first minute in which the performers move to their starting points, that sounds the same. *AfterMath{s}* can be understood as a single piece. This notion of singularity, however, is little more than what Badiou calls the count-as-one, essentially something that is inherently multiple but is referred to as one for the sake of ease and/or comprehension. Whilst existing as a single work, the piece is in and of itself instantly multiple. This makes *AfterMath{s}* fundamentally different to the other works in the portfolio in the sense that it moves from the inherently knowable to the unknowable. This is perhaps the closest that the project can be to an ontological understanding of noise as the manifestations within the piece are—during performance, at least—outside of human control.

4. Conclusions

At the outset of this project I outlined two research questions and posited two hypotheses thus:

Questions

- What is noise?
- How is noise?

Hypotheses

- Noise is not just a sound
- Noise is not just unwanted

Though the application of a methodology that instigated a dialogue between the act of composition and its subsequent analysis through philosophical thought, the project interrogated that claim and the subsequent question/s that arose. There is a relationship that exists between the different stages of the research and the pieces that accompany each new finding. The findings of the project can be summarised as follows:

Questions/Answers

- How is noise?
Noise *is* in relation to void.
- What is noise?
Noise is.

The answers to the questions were brought about through the investigation and subsequent confirmation of the two hypotheses, which is to say that noise is not just a sound, and is also not just unwanted. I will now attempt to explain the answers to the questions, and also situate the hypotheses through a recapping and contextualisation of the main findings of the research alongside the relevant practice.

The notion that noise is concerned only with sound is one that was dismissed at an early stage in the project. Shannon's model of communication theory posits

noise as an external event that affects the act of communication through a disruption of the pure message in the channel. Shannon discusses noise in terms of telegraphy, but his visual representation abstracts noise, situating it as an event that is external to the channel.

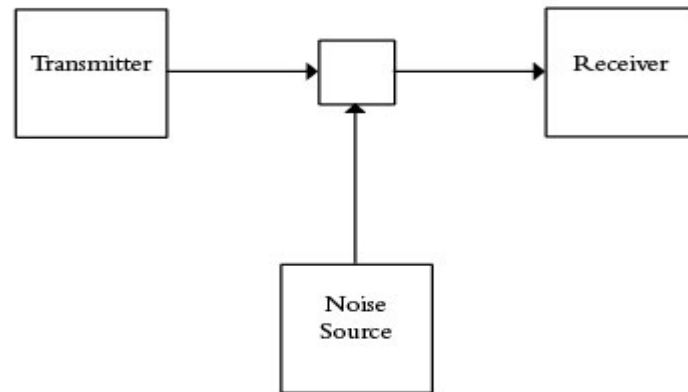


Figure 4.1: Shannon's noise

This is not to say that noise cannot ever be present in the form of a sound, but that it does not *insist* on sound being the principal medium, or even the medium at all. Michel Serres asserts that noise is present in handwriting when he says that '[t]o write badly is to plunge the graphic message into this noise which interferes with reading' (Serres, 1982, 66). Noise is not connected to sound here, but to the act of communication itself. Whilst the sonic is a major form of communication, it is hardly the only form available.

Although the view that noise acts as a disruption in the channel of communication complicates the notion that it is an unwanted sound, Shannon's model still provides a rather basic, singular state for noise: noise is a disruption, noise is unwanted. The literature dealing specifically with noise discusses the ways in which noise is seen to disrupt the pure message, and thus communication:

- Noise manifests as an external form of overcoming, flooding the receiver with information. This flood does not restrict the flow of the pure message, but prevents the receiver from determining which parts of the information are sent from the transmitter, and which are extraneous;
- Noise manifests as an external form of violent rupture. This rupture causes the information to be fragmented, and for only part of the pure message to be intercepted by the receiver. The receiver is unable to interpret the mes-

sage as intended because parts of it are missing. This can mean that a message is unintelligible, or that the message is changed due to the omission of parts of the original;

- Noise is present within the channel of communication itself as a form of medial corruption. This corruption is part of the essential nature of communication and is an inevitable consequence of communication occurring.

The three models complicate the notion that noise is a purely external event that interacts with the pure message. The pieces *After Homdel* and *Dualities* worked as a form of proof-of-concept of the models. Both *After Holmdel* and *Dualities* were successful to the extent that they demonstrated the ability of the model to be implemented in musical terms. The application of noise as mediality in the form of *Angular Frequencies* (see appendix) was less successful. The conclusions that can be drawn from the lack of success with *Angular Frequencies* are that the notion of mediality cannot be applied in the same way as the episto-ontological models of overcoming and fragmentation. At this early stage in the portfolio, it was clear that the three noise models were not equal. The pieces also confirm the ideas raised in the first chapter about the relationship between noise and *a* noise.¹ In *After Holmdel* noise as fragmentation is applied to the structure of the piece, resulting in noise that is manifested in sound. In *Dualities*, however, noise as overcoming is applied in such a way that the piece is on the whole very quiet. Both of these pieces demonstrate noise as having an effect upon sound, but not being located within it as such. The notion of noise having an effect, but not being located *within* sound again raises the question of relations. When noise is understood in this way, the question ‘what is noise?’ ceases to be relevant. It is rather the effect that noise has, or ‘how is noise?’, that becomes the focus of the work.

The next stage of the process—the mixing of models—generally moved towards masking the effects of the noise models from the audience, and also from the performers. In *The Totality of Number*, noise as overcoming was still clearly visible on the surface of the piece in the form of the dense parametric notation, but noise as mediality was implemented in the different stages of refinement that the notation went through. This is in some ways a contradictory process where notation that is intended as difficult to realise as a kind of noise (overcoming) is also made easier through a different kind of noise (mediality). In *sur votre*, the concept of masking is

¹ See p. 31.

taken a step further. Here the models of noise as overcoming and fragmentation are applied and are clearly visible in the outline score of the piece (see figure 3.5). However, through the notion of mediality—in this case, the digitisation of the score—the models are shielded from the performer (see figure 3.6). This process is also applied in *Everyone Else But You* on a visual level, and in *Synaesthetics* through the transition of medium (from visual to sonic). The shielding demonstrates that not only is noise's location within sound not universal, but also that its effects can be shielded. The shielding of the three noise models within these pieces also brings into question to notion of desirability: if noise is not visible, the how can one identify it as unwanted? However, this issue is more fully dealt with through a return to the ontological.

In addition to examining the way in which the models affect the pieces—by observing the ways in which the models reacted to each other—it was possible to better understand the nature of the models themselves. The principal conclusions from this section of the project are two-fold. First, it became apparent that, although it was possible to impose specific models upon the piece, both through blunt, and relatively nuanced forms of craft, it was also possible, upon analysis of the resulting piece, to see all three models at work in all of the pieces. Second, whilst one is able to find spontaneous examples of noise as fragmentation and overcoming occurring within parts of the compositional method, noise as mediality manifested as an overarching theme of the entire process. This reconfigures the three noise models as N1[(N2) (N3)] where N1 is noise as mediality, and N2 and N3 are noise as overcoming and fragmentation.

This reconfiguration of noise as one—but essentially multiple through the model relationships—negates the value of the pure message in Shannon's model. This is to say that if all communication is inevitably subject to noise merely by being transmitted, then the pure message does not exist. If the pure message does not exist, then the question 'how is noise'—a question that relies on the effect of external noise models upon the pure message—becomes irrelevant.

To return to the thinking of Badiou, the pure message *can* exist, though only in the form of a count-as-one, which is to say, as 'no more than a system of conditions through which the multiple can be understood as multiple' (Badiou, 2007 [1988], 29). The count-as-one-ness of the pure message situates it as a tool through which one might understand the way in which the models of noise as overcoming and noise as fragmentation operate. The pure message—and, by extension, the understanding of noise as overcoming and fragmentation as distinct models—can be

considered an epistemological construction of noise, which is to say, noise applied as a human construct. Noise operating in this way can, I think, be understood as inherently undesirable. As the project is concerned with ontology, this understanding of noise is not the only cause for concern here. Whilst the question ‘how is noise?’ in relation to the (epistemic) pure message is irrelevant, the question can still be applied to a different, ontological phenomena, namely that of void. However, in order to understand noise in relation to void, noise must first be related to Badiou’s ontology. The ways in which the three models operate bear a strong resemblance to a Badiouian construction of being.

In the pieces that apply all three noise models—that is, both explicitly in *Everyone Else But You*, and implicitly in *Steganographica*, *Null*, and *AfterMath{s}*—the external models of noise can be understood as being related to the way in which individual nodes are connected in being. To return to the analogy of the ontology of a human as discussed in chapter one, I explained that whilst one might understand a person to be a single example of a life form, that person is made up of an uncountably infinite number of smaller parts: from organs to so-called fundamental particles. This understanding of the one being essentially multiple, ‘[t]he multiple from which ontology makes up its situation is composed solely of multiplicities. There is no one. In other words, every multiple is a multiple of multiples’ (*Ibid*), can be aligned with the notion of noise as fragmentation. If noise—in the form of $N1[(N2), (N3)]$ —is understood to be a constant presence in communication, then the message—which would be considered singular—is subject to an infinite amount of fragmentation: the singular message is actually multiple. Second, the notion that fragmentation is uncountably infinite can be understood as a kind of overcoming. The infinite nature of the multiple, which is to say that ‘every multiple is a multiple of multiples’ (*Ibid*) exists as a kind of flooding. This is more subtle than the flooding of the receiver with information, as noise as overcoming here exists *within* the model of noise as fragmentation. This is similar to the simultaneous manifestation of noise models in *Synaesthetics*, where through scratching the silver oxide, the negative is fragmented whilst the image on the negative is simultaneously overcome by new material. This understanding of the episto-ontological noise models existing within each other ties them to Badiou’s construction of the multiple and the one, which is to say that the one is fragmented in the form of the multiple, and that multiple is infinitely—overwhelmingly—multiple in and of itself in the form of an inconsistent multiplicity.

The model of noise as mediality can also be understood in relation to Badiou's ontology, but on a wider scale. Just as in my construction of noise, mediality does not relate to the way in which 'individual' nodes are related to each other, but to the notion of relational being itself. If being is constructed of relations, then one might understand being to exist as an inconsistently multiple channel. The channel here is not constructed with lines or pure messages, but with crossings, like the Deleuzian fold. When viewed in this way, noise can be mapped onto a Badiouian construction of being on both a macro- and micro-structural level. The question 'how is noise?' can now be resurrected and applied to the notion of void. Whilst Badiou asserts that the one does not exist, he uses the concept of void as a form of pivot. Void exists both as a framing of being and an integral aspect as demonstrated in relation to an atom in figure 1.3. If one asks 'how is noise?' now, the answer must be 'in relation to void'.

As in the first chapter, I now move from 'how is noise?', to 'what is noise?' This question is inherently problematic within the realm of the ontological, which is to say, that to definitively answer the 'what' requires a distillation of noise to the singular, a definitive version. The phrase 'noise is' is in itself inherently multiple. To say 'noise is' can be taken to mean that noise exists which is itself a reasonable answer to the question 'what is noise?' The second meaning inherent here is that noise *is*. This is concerned with noise operating *as* something rather than *being* something. This duality can be mapped onto the findings in the portfolio, which is to say that the noise models can be understood as existing both in the singular (noise as overcoming, for instance) as well as inherently multiple. The three noise models identified at the opening of this thesis can be seen in parallel with Badiou's construction of being. The application of theories to the creation of musical pieces, and the subsequent findings that occur through reflection upon the portfolio allow me to map the three noise models onto Badiou's ontology, which is to say that the three models constructed in N1[N2, N3] can be understood to be synonymous with the ontology of communication. However, the suggestion that noise is the being of communication can be taken further. Being is relational, and in being so, being functions as an inconsistently multiple channel. If one understands being on these terms, then noise and ontology are synonymous. This leads me to the final contestation, which is to say, the questioning of the proposition that noise is only unwanted. 'What is noise' cannot be answered by one of a pair of binary opposites, that is 'noise is good' or 'noise is bad', but must be answered by 'noise must be', which is to say 'noise is'.

To some extent, this finding signals the end of the original line of inquiry within the project. It does not, however, signal the end of the project itself. Noise exists in a hierarchy making it both one and essentially multiple. This model of noise can be mapped onto Badiou's model of being. The later pieces in the portfolio—*Steganographica*, *Null*, and *AfterMath{s}*—have already started to take the project beyond its original remit. *Steganographica* and *Null* parasite material (as Serres would understand it) from earlier works. I have already mentioned that this approach presents a viable gateway for future works, especially solo and small chamber pieces. The nature of parasitism also presents the possibility of creating a 'pandemic' cycle of works in which a series of pieces are created from a single source. The other thing that this conclusion arrives at is that noise, in this sense, is knowable. Noise is that which is revealed in this single instance through the creation of music. This is not an ontological state. The next step was to make noise unknowable. This is achieved in *AfterMath{s}*, which moves away from the single viewpoint concert pieces that make up the rest of the portfolio, and towards a more fluid installation setting. This approach to writing music, in which temporality and space become fluid through the use of multiple spaces and routes presents another gateway for more work. The approach taken in *AfterMath{s}* could be applied to both small and very large-scale works utilising both fixed and open instrumentation. This pathway would also open opportunities for non-concert hall works and could lead to a series of site-specific pieces for galleries and other public spaces.

Noise can be understood as a fundamental quality of being. Its existence as a quality rather than a 'part' is tied to the fact that noise is relational. Much of the literature of noise still treats it as a phenomenon that fights against that which is normative, and indeed the manifestations that form the basis of those discussions *are* often unpleasant or unwanted. However, this is one of an infinite number of ways in which noise exists in relation to being. Practically, there is much that can be done to further develop my own particular kind of noise music, principally in the vein of the medial. Noise is ubiquitous in being, and my work will do less to manifest noise, and more to identify that which is already present.

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Musical influences

The list of works included here is not intended as an exhaustive list of pieces that have influenced the portfolio or the thesis in general. Rather, the list comprises of works that have served as inspiration—directly or indirectly—to me. Works are listed by composer and then by date.

Beuger, Antoine, *'t aus etwas (lied)* (1995)

- _____, *Cantor Quartets* (2003)
- _____, *Sixteen Stanzas on Stillness and Music Unheard* (2004)
- _____, *Tanzaku* (2007)
- _____, *Liex de passage* (2008)

Biel, Michael von, *String Quartet no. 1* (1962)

- _____, *String Quartet no. 2* (1963)

Billone, Pierluigi, *Mani.De Leonardis* (2004)

- _____, *1+1=1* (2006)
- _____, *Mani.Mono* (2007)
- _____, *Mani.Matta* (2008)
- _____, *Muri III b: per Federico De Leonardis* (2010)
- _____, *Mani. Gonxha* (2012)

Cassidy, Aaron, *String Quartet*, 2002

- _____, *Because the mark the zone where the force is in the process of stringing
(or, Second Study for Figures at the Base of a Crucifixion)* (2008)
- _____, *What then renders these forces visible is a strange smile
(or, First Study for figures at the Base of a Crucifixion)* (2008)
- _____, *Second String Quartet* (2010)
- _____, *A painter of figures in rooms* (2012)

Cage, John, *Imaginary Landscape No. 1* (1939)

- _____, *Living Room Music* (1940)
- _____, *Imaginary Landscape No. 4* (1942)
- _____, *Sonatas and Interludes* (1946-48)
- _____, *4'33"* (1952/62)
- _____, *Cartridge Music* (1960)

Feldman, Morton, *Projection 1* (1950)

- _____, *Patterns in a Chromatic Field* (1981)
- _____, *String Quartet II* (1983)
- _____, *Coptic Light* (1985)

Ferneyhough, Brian, *Cassandra's Dream Song* (1970)

- _____, *Time and Motion Study II* (1973-76)
- _____, *Unity Capsule* (1975-76)
- _____, *Second String Quartet* (1980)
- _____, *Adagissimo* (1983)
- _____, *Carceri d'Invenzione IIa* (1985)
- _____, *Mnemosyne* (1986)
- _____, *Third String Quartet* (1987)
- _____, *Carceri d'Invenzione IIc* (1987)
- _____, *Fanfare for Klaus Huber* (1988)
- _____, *Trittico per Gertrude Stein* (1989)

_____, *Fourth String Quartet* (1989-90)
_____, *Bone Alphabet* (1991)
_____, *String Quartet No. 5* (2006)
_____, *String Quartet No. 6* (2010)

Frey, Jürg, *Streichquartett* (1988)
_____, *Zwei allerletzte Sächelchen* (1990)
_____, *Streichquartett II* (1998-2000)
_____, *Un champ de tendresse parsemé d'adieux* (2011)
_____, *Circular Music No. 2* (2012)
_____, *Time Intent Memory* (2012)

Hübler, Klaus, K., *String Quartet No. 3* (1982)

Iddon, Martin, *...à son dernier soupir* (2006)
_____, *Rapt before the sky* (2007)
_____, *ventilation* (2007)
_____, *Mohl ip* (2009-10)
_____, *Danaë* (2009-10)
_____, *hamadryads* (2010)
_____, *complicity simplex* (2010-11)
[collaboration with Antti Saario and Adam York Gregory]

Lachenmann, Helmut, *temA* (1968)

_____, *Consolations II* (1968)
_____, *Pression* (1969-70)
_____, *Dal Niente* (1970)
_____, *Guero* (1970)
_____, *Gran Torso* (1972)
_____, *Allegro sostenuto* (1986-88)
_____, *Reigen seliger Geister* (1989)
_____, *Grido* (2001)

Lucier, Alvin, *I am sitting in a room* (1970)
_____, *A Tribute to James Tenney* (1986)
_____, *Music for Cello with One or More Amplified Vases* (1992)
_____, *Small Waves* (1997)

Pisaro, Michael, *The Punishment of the Tribe by its Elders* (2013)
_____, *Closed Categories in Cartesian Worlds* (2013)

Tenney, James, *Koan: Having Never Written a Note For Percussion* (1971)
_____, *Postal Pieces* (1971)

Saunders, Rebecca, *blaauw* (2004)

_____, *Blue and Gray* (2005)
_____, *Stirings Still* (2007)
_____, *Fletch* (2013)

Sciarrino, Salvatore, *All'aure in una lontananza* (1977)

_____, *Aspern Suite* (1979)
_____, *Hermes* (1984)
_____, *Canzono di ringraziamento* (1985)
_____, *Come vengono prodotti gli incantesimi* (1985)

_____, *Lo Spazio Inverso* (1985)
 _____, *Fra i testi dedicati alle nubi* (1989)
 _____, *L'orizzonte luminoso do Aton* (1989)
 _____, *Venere che le Grazie la fioriscono* (1989)
 _____, *Addio case del vento* (1993)
 _____, *L'orologio di Bergson* (1999)
 _____, *Morte tamburo* (1999)
 _____, *Immagine fenicia* (2000)
 _____, *Lettera degli antipodi portata dal vento* (2000)

Stockhausen, Karlheinz, *Kreuzspiel* (1951)

_____, *Konkrete Etüde* (1952)
 _____, *Kontakte* (1958-60)
 _____, *Mikrophonie I* (1964)
 _____, *Mikrophonie II* (1965)
 _____, *Hymnen* (1966-67)
 _____, *Musik für ein Haus* (1968)
 _____, *Helikopter-Streichquartett* (1992-93)

Whilst this list may seem, in the first instance, to comprise a very broad range of composers and musical works, there is an internal logic that runs throughout. For the sake of clarity, and perhaps in order to provide some illumination as to how these choices relate to my own music, I will briefly comment on the list presented.

Rather than provide comments on each composer and each work, I will instead create groups that represent specific characteristics that I utilise in my own practice. The first such grouping includes members of the Wandelweiser collective, namely Antoine Beuger, Jürg Frey, and Michael Pisaro. All of their pieces listed here are examples of music that utilises an extremely small amount of material. Beuger's '*t' aus 'etwas (lied)*' consists solely of two performers making 't' sounds. The intention of the piece is that the performers attempt to make the 't' sound simultaneously, but, as is perhaps inevitable, they are unable to maintain synchronicity over the piece's duration. This, like any of the other pieces by Beuger, Frey, and Pisaro listed above, expose the cracks inherent in the execution of simple processes, and it is in these cracks that I draw my inspiration.

The second grouping of composers are also concerned with the creation of pieces utilising a limited range of materials. It is in this grouping that I would situate James Tenney and Alvin Lucier. Tenney's piece *Koan: Having Never Written a Note For Percussion* is itself a *crescendo* and *diminuendo* upon a single tam-tam roll. The piece—which itself has no fixed length, but which I have heard recordings of up to twenty minutes—asks the performer to exert an incredible level of control over what, on the face of it, may seem like a relatively simple action. In addition to making use of limited material, the Lucier pieces cited are also concerned with issues of

mediality. *I am sitting in a room* and *Music for Cello and One or More Amplified Vases* make use of spaces into which material is projected. Those spaces then transform the material due to their particular acoustic properties.

Noise as mediality is also present in pieces written by John Cage and Karlheinz Stockhausen. Stockhausen's *Mikrophonie I* aims to broadcast sounds that would otherwise perhaps not be heard. The microphones are used as a channel through which sonic information is corrupted using filters. Cage's *Cartridge Music* uses the cartridge from a record player, itself a channel between record and machine and manipulates it using a variety of objects. It is the focus that is placed upon the site of transfer that is most interesting to me here.

Both Stockhausen and Cage also serve as important influences for their use of space, for example, in *Musik für ein Haus* where the building becomes a central aspect of the piece. Space is also an important consideration for both Morton Feldman and Rebecca Saunders, but for me in fundamentally different ways. From Feldman, I draw influence from his use of extended time in pieces such as *String Quartet II*, a work that lasts for over six hours. Saunders's music, though not of inconsiderable duration, is influential to me because of her treatment of space within the works themselves, both through the structured use of silence, and in the intervallic space between pitches, an important aspect of her writing. I also draw influence from Saunders's focus on the qualities of specific sounds created by instruments and way in which these sounds are treated as evolving entities as pieces unfold.

The treatment of timbre and instrumental relationships is an aspect of Pierluigi Billone's work that interests me. In *1+1=1*, Billone takes a pair of bass clarinets and, over eight movements, attempts to blend two separate entities into a single meta-instrument (alluded to in the title of the work). I am also inspired by the way in which Billone treats instruments as objects, specifically percussion instruments in pieces such as *Mani.De Leonadis*, which is to say, as a timbral interface with which the performer interacts parametrically.

The treatment of instruments as objects to be explored geographically is an approach to composition that I have drawn upon since my time as an undergraduate. It is in this approach that I draw on the work of Michael von Biel and, to a greater extent, Helmut Lachenmann. The works *Guero* and especially *Pression* serve as examples of ways in which instruments might be explored as channels to be corrupted. As with Billone, Lachenmann's treatment of instruments has been fundamental to my compositional development.

The flute music of Salvatore Sciarrino occupies a sound-world that is close to the writing in *Null*, specifically the use of multiphonics. Multiphonics are in themselves an element of Sciarrino's writing that I have drawn upon such as, for example, in *Lo spazio* and also specifically in his work for flute, *Hermes*, for example which consists on a single multiphonic played repeatedly. This repetition exposes the mediality of the player in that each instance is slightly different, a quality that this work shares with pieces written by Beuger and Lucier discussed previously.

The music of Brian Ferneyhough and Aaron Cassidy does not occupy a similar sound world to my own music. Rather, it is their approach to notation that I find interesting. The use of parametric decoupling, through multiple levels of dense mensural notation in the music of Brian Ferneyhough, or through the quasi-graphic tablature approach prevalent in Cassidy's work, both take an approach to the instrument as multi-faceted object that has influenced my own writing, especially works such as *The Totality of Number*. Klaus K. Hübler's Third String Quartet is also an important addition here, treating the performers left and right hands as separate entities, something that I do in *Steganographica*.

The influence of Martin Iddon as my teacher is inevitable. However, in addition to the advice given by him, there are aspects of his music that have impacted upon the music that I write. The use of known material—Josquin in Iddon's case—is something that can be seen in *Everyone Else But You*. Finally, his treatment of string instruments—*Danaë* and *Mohl ip*—and especially his approach to decoupled notation are important when considering my music.

Appendix A: work not included in the final portfolio

Angular Frequencies

To write badly is to plunge the graphic message into this noise which interferes with reading, which transforms the reader into an epigraphist. (Serres, 1982, 66)

A silent figure of significant noise exists in handwriting. There exists a basic form of letters intended to be read without any problem whatsoever. It is a form similar to the one in front of you at this very moment, lodged long ago in the system of printing. Between pure legibility and an entirely illegible scrawl there lies a great deal of variability. Significant noise cannot be disentangled from the specifics of such variability; it is a legibility of apparent illegibility. (Kahn, 1999, 26)

Both of these writers—Kahn is reacting to Serres—seek to highlight the noise inherent in the written word. This notion forms the basis for *Angular Frequencies*, the third piece in this portfolio, and one which deals with the model of noise as medi-ality. The piece—or rather the concept—consists of a Max patch, which is to say, a piece of code that is given its visual platform using the program *Max/MSP*.¹ The GUI for the patch from a performance perspective is constructed thus:

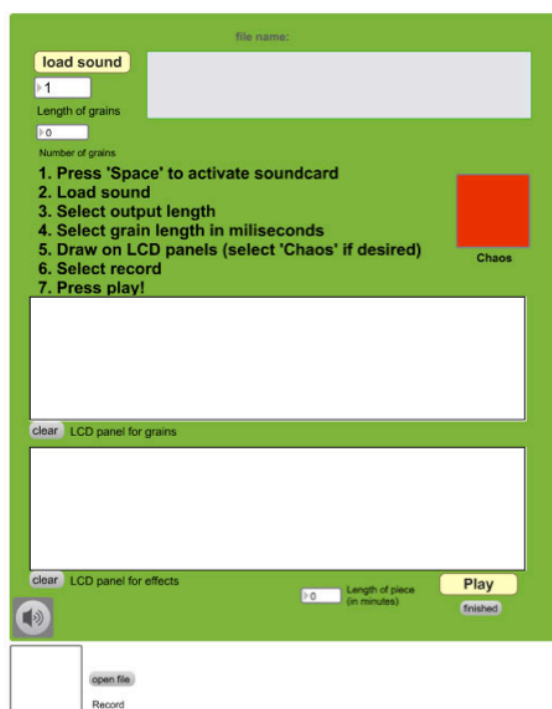


Figure 1: *Angular Frequencies* GUI

The patch is designed as a granular synthesiser: a program that splits sounds into shorter 'grains' that can be distributed in a number of ways. A WAV file is uploaded

¹ The piece remains unfinished.

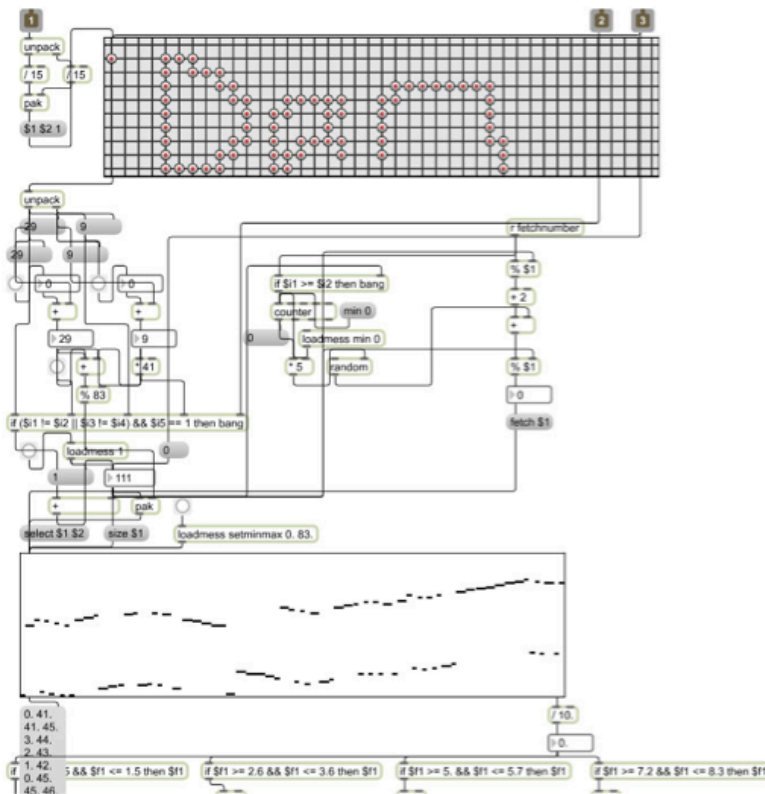


Figure 3: Effects code at top of figure added to grains in white box bottom centre

Another number object is used to determine the output length in minutes (next to the ‘play’ button in figure 1), and the ‘play’ button is used to start the process. The final part of the patch is a toggle switch that engages a ‘chaos’ function (figure 4). This function is formed of two basic principles: first, it has the ability to alter the final length of the performance by fifty per cent. Second, it has the ability to reassign the position of the first grain on the dynamic matrix. By this, I mean that in a default setting the matrix—which has the ability to consist of up to ten thousand nodes—runs in a linear pattern from top left to bottom right. The chaos patch is able to reassign the position of node one, thus altering the code, which is created in part by the performer.

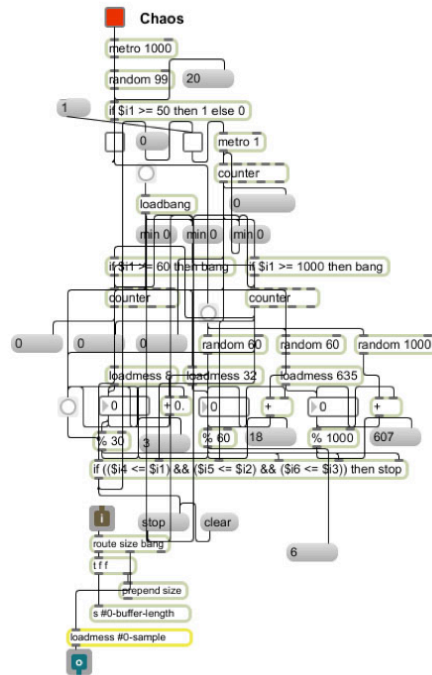


Figure 4: chaos sub-patch

The visual foundation of the piece is intimately connected with the figure of handwriting: the performer is forced to write in the boxes, and the personal qualities of their handwriting—in addition to their own name—are instrumental in the selection of both the grains and effects. The question to be asked here pertains to the location of Serres’s channel and the identity of the ‘silent figure’ of Kahn’s noise manifested in handwriting. This manifestation of noise is concerned with locating the site of external noise sources, which here are located in the body of the writer. This positing of the writer as the source of noise means that whoever enters information into the patch is in control of the final product and becomes the source of noise.

Mediality is manifested in two ways through *Angular Frequencies*. First, the performer acts as a corrupting source on the pure message, which is to say, the unadulterated WAV file. This approach situates the writer as the noise source. Second, the use of the ‘chaos’ sub-patch complicates this sense of control as, not only does the writer have no control over the parameters set when the button is pressed, but, unbeknownst to the writer, they have no control over whether the button will work at all as it is only programmed to work fifty per cent of the time. The site of the pure message is multiple here: the performer sees the original WAV file as the

pure message, but to the architect (composer) the pure message is that which is created by the performer, and the patch itself is the source of noise.

Finally, the notion of architect is complicated as the patch was constructed as a collaboration between myself and an undergraduate student. Whilst I maintained control over the infrastructure of the patch—which is to say, what the patch did and the effect that this would have on the end user—the undergraduate student facilitated these specifications using his technical knowledge.³ This means that the patch must in some way be a kind of authorial compromise, a composer's concept articulated by a technician. This is, however, not too dissimilar to the composer/performer relationship in 'traditional' compositional practice. The reading of the composer/technician relationship in any other way is to me a misinterpretation of the composer/performer relationship in my work at least. The piece is, therefore, a process, which is to say, a channel in itself, which mediates the actions of several different people. The handwriting is just one aspect of noise in the channel that leads to a corruption of data from the assumed 'perfect' communication of the source recording.

³ There is a discussion about the composer/technician relationship regarding the piece *AfterMath{s}* on p. 92-94 of this document.

Appendix B: copyright permissions from performers

The following pages contain email messages regarding copyright from performers of pieces recorded and included in this submission. The performers are as follows:

Dualities: Alice Dawkins, Alaina Patterson, Patrick Rimes, Harry Strong

The Totality of Number: Sarah Parkes Bowen

sur votre mortifiante ensemble, imaginaire, symbolique et Le théâtre: Patrick Rimes, Steve Paine, Charlotte Woods, Tim Slater

Steganographica: Harry Strong

Null: Alicia Higgs

AfterMath{s}: Alaina Patterson, Patrick Rimes, Harry Strong, Alicia Higgs, Steve Paine, Michael Gibbs, Johnny Beevers, Tenley Martin, Katie Lawrence

Daniel Wilson

From: Alice Dawkins <a.c.d@live.co.uk>
Sent: 25 February 2014 21:35
To: Daniel Wilson
Subject: Copyright Permission

Hello Dan Wilson

I, Alice Corrina Dawkins, do not mind at all if people would like to listen to (though potentially not hear) the performance i was involved in for your PhD thesis of 'Dualities'.

Best of luck with it.

Alice

Daniel Wilson

From: Alaina Patterson <Lainy91@yahoo.co.uk>
Sent: 25 February 2014 22:35
To: Daniel Wilson
Subject: Copyright Permission

Dear Dan,

I, Alaina Patterson give copyright permission to include performances of Dualities and Aftermath(s) in which I was a part of your PHD submission.

Thank you,

Alaina

Daniel Wilson

From: Patrick Rimes <patrick.e.rimes@gmail.com>
Sent: 25 February 2014 16:30
To: Daniel Wilson
Subject: Copyright Permission

I, Patrick Rimes give you copyright permission to include performances of 'Dualities', 'AfterMath{s}', and 'Sur votre mortifiante ensemble, imaginaire, symbolique et Le théâtre' as part of your PHD submission.
Best wishes,

P

Daniel Wilson

From: Harry Strong <mc10h2s@leeds.ac.uk>
Sent: 25 February 2014 16:04
To: Daniel Wilson
Subject: Copyright Permission

This email states that I, Harry Strong, give Daniel Wilson copyright permission to use my performances of Dualities, Aftermath(s), and Steganographica.
Sincerely, Harry Strong

Daniel Wilson

From: Sarah Parkes Bowen <sarahpbowen@hotmail.co.uk>
Sent: 02 March 2014 11:29
To: Daniel Wilson

I, Sarah Parkes Bowen give copyright permission for Daniel Wilson to include my recording of The Totality of Number in his PhD submission.

Daniel Wilson

From: Stephen Paine <steve.t.paine@gmail.com>
Sent: 27 February 2014 00:16
To: Daniel Wilson
Subject: copyright permission

To whom it may concern,

I, Steve Paine, give Dan Wilson permission to use my performances in the following works, for use in his PHD:

Sur votre mortifiante ensemble, imaginaire, symbolique et Le théâtre, AfterMath(s)

Daniel Wilson

From: Charlotte Woods <charlotte.woods5@googlemail.com>
Sent: 26 February 2014 09:07
To: Daniel Wilson
Subject: Copyright Permission

I, Charlotte Woods, give copyright permission to Daniel Wilson to include performances of Sur votre mortifiante ensemble, imaginaire, symbolique et Le théâtre, all of which I played in, as part of his PhD submission.

Daniel Wilson

From: Timothy <timslater2@hotmail.com>
Sent: 26 February 2014 21:12
To: Daniel Wilson
Subject: Copyright Permission

I, Timothy Slater, give Daniel Wilson copyright permission to use my performance of 'Sur votre mortifiante ensemble imaginaire, symbolique et Le théâtre' in his PhD submission.

Daniel Wilson

From: Dan Wilson <dan.r.wilson88@gmail.com>
Sent: 28 February 2014 10:35
To: Daniel Wilson
Subject: Fwd:

Daniel Wilson
Research Postgraduate
School of Music
University of Leeds
Leeds
LS2 9JT

e: d.wilson@leeds.sc.uk

Begin forwarded message:

From: noreply@profiles.google.com
Date: 28 February 2014 09:40:50 GMT
To: undisclosed-recipients;

Tenley Martin reached you via your Google+ profile. To see the full conversation and reply, sign in to [Gmail.com](https://www.google.com) with dan.r.wilson88@gmail.com.

I Tenley Martin give copyright permission for Daniel Wilson to include my performances of AfterMath{s} in his PhD submission

Daniel Wilson

From: Alicia Higgs <mc12amh@leeds.ac.uk>
Sent: 25 February 2014 16:49
To: Daniel Wilson
Subject: Copyright Permission

Dear Dan,

I, Alicia Higgs, give copyright permission to include performances of Null and AfterMath{s} of which I was a part of for your PhD submission.

Best wishes,

Alicia

Daniel Wilson

From: Michael Gibbs <jl10mg@leeds.ac.uk>
Sent: 25 February 2014 15:27
To: Daniel Wilson
Subject: Copyright Permission

I give copyright permission for Daniel Wilson to use any recordings of me (Michael Gibbs) in performances of 'AfterMath{s}' which form part of his PhD submission.

Yours sincerely,

Michael

Michael Gibbs
200446260

Daniel Wilson

From: Johnny Beevers <johnnybeevers@hotmail.com>
Sent: 28 February 2014 00:05
To: Daniel Wilson
Subject: Copyright Permission

To whom it may concern,

I, Johnny Beevers, give copyright permission for Daniel Wilson to include my performances of AfterMath{s} in his PhD submission.

Regards,

Johnny Beevers.

Daniel Wilson

From: Katie Lawrence <katie.lawrence90@gmail.com>
Sent: 25 February 2014 18:45
To: Daniel Wilson
Subject: Copyright Permission

Hello!

I, Katherine Lawrence, give copyright permission to Daniel Wilson to include performances of AfterMath{s} in which I took part in for his PhD submission.

- Katie