# DISCONTINUITY: a compositional approach to the dynamic decoupling of gesture and sound in live performance

BY

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An exegesis submitted to the New Zealand School of Music in partial fulfilment of the requirements for the degree of Master of Music in Composition

Victoria University of Wellington 2019

# Abstract

The gestural-sonorous object, as described by Rolf Inge Godøy, has experienced a gradual aesthetic splitting in New Music practices. The notion that physical gesture relates to sounding result in a linear, cause-and-effect fashion can no longer be taken as a pre-condition in the study of compositional thought, as New Complexity conceives of ever more diverse modes of instrumentally focussed sound production, while the New Discipline eschews musical tropes altogether. This thesis formulates a new model of information flow in performance, to facilitate an understanding of the role physical gesture plays in the interpretative processes involved in the creation of bodily and cultural meaning, as derived from musical experiences. This model, based on the concept of the 'assemblage', allows for an in-depth consideration of the abstract topologies of external references in music, and provides a foundation for a taxonomy of the modes of disruption of gestural-sonorous linearity. This is developed in the pursuit of a more dynamic and meaningful conception of the role physical gesture plays in the acquisition of knowledge and meaning in music.

# Acknowledgements

To my supervisors, Michael Norris and Jim Murphy. Thank you for your time, your questions, and your suggestions. Thank you for always managing to say the right thing at the right time. Your aesthetic and conceptual insight is always appreciated.

To the performers who gave their time and wisdom, this work would have been much less rewarding without your input. Zane, Simon, Anne, MEANWHILE, Jake, Justin, Chu-Chuan, Ching-Chun, Jameson, and Ben. You have all indelibly left your mark on my work. Thank you.

To those making music with and around me. Nick, Elliot, Antonia, Jesse, David, and the wider NZSM community—your hard work and creative thought is everinspiring, and I feel blessed to be surrounded by such great artists. Thank you.

To Chris at SOUNZ Centre for New Zealand Music, Roy, Jesse, and Antonia. Thank you for your assistance in documenting a number of the works presented here. They are wonderful mementos.

To my friends. Rosie and Eric, thank you for your culinary efforts, and for putting up with strange sounds and activities throughout the year. Charlotte, thank you for allowing me the opportunity to pursue other creative endeavours. Hugh and George, thank you for your continuing support, for coming to shows, and for being willing soundboards for years.

To my family, for everything and more. Thank you. This is for you.

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## 1. Introduction

For some time now, I have been interested in the connection between gesture and sound. This interest was sparked a number of years ago, during a brief period researching lip-sync practices in drag performance. From the outset, I wanted to know what it was about lip-sync performances that drew me in so strongly, and to attempt to chart the root of the cultural importance of the practice. However, in the spirit of complete honesty: I wanted to know why drag performances made me so excited. Certainly, it was something about the performer's technical ability: how closely their mouths synchronised with the soundtrack, and how captivating their performance was. Undoubtedly, it also drew upon the extra-musical: the outfit, the song choice, the look, and the overall story. These are all things that are integral to the art of drag. If everything went well, and the performer managed to get everything just so, there would be a certain synergy between all of these distinct things which would propel the entire performance. All of these things were supposed to work together, playing individual roles in a five-to-six-minute narrative. They each served a function in the performance, because they were relevant to the story. But lip-sync in drag culture is inseparably attached to the wider performance of cultural identity. Performance, in this case, is all about navigating meaning—cultural meaning—and each of these things aided in that.

Furthermore, there is an uncanny quality to the performance style. Lip sync is mimicry, often quite obviously so. The performer mouths the words to a song while the song is played in the background: there is a dissonance between what you are hearing and what you are seeing. The person on stage is, after all, definitely *not* Madonna. The performers aren't actually singing, rather they are displaying all of the visual physicality of vocalisation and performing none of the audible vocalisation. This dissonant aesthetic—unfulfilled expectation resulting from awkward and incomplete visual-sonic cause-and-effect chains—became a large part of what I was interested in as a composer. More and more, as I engaged with these kinds of materials, the site of tension between expectation and result expanded. No longer was it only about resisting, interrupting, or completely

circumventing the cause-and-effect paradigm on a bodily level; there was a case for it being applied to wider cultural practices and aesthetics.

It became clear to me that each of the objects and practices in a performance were in dialogue with each other. Each object was imbued with its own relative meaning, each practice drawing upon and illuminating the culture from which it emerged. These qualities bleed into and out of one another. Objects and practices, culturally speaking, are engaged in a constant dialogue, performance being no exception. Some objects carry with them contexts of expected uses, and as such, there is the ability to place dissonant contexts within the same piece. Furthermore, the composer can resist the modes of context formation, and in doing so, subtly change the flow of meaning throughout the course of a performance. The composer may even incrementally reform the meaning of a seemingly static object, through its placement within various new cultural contexts. The modes of performance, alongside the requisite tools, reference outwards, pulling from the wider reaches of some cultural whole. These references include us as cultural agents, and they include our experience. In fact, they rely on us to engage in dialogue with them, in order to be culturally defined. They extend outwards towards broader social circles, that widen from the singular individual, as wide, hypothetically, as the broadest reach of culture, however conceived. All the while, they maintain different meanings when placed in different contexts. Each object and practice holds different qualities for each person that engages with them, and those qualities feed back into the wider relational network—a network called 'culture' from where the meaning-making process begins again. In short, to rouse that infallible cliché: everything is subjective, insofar as the experience of culture relies on subjective interaction.

"Culture" is a concept that is known for being specifically unspecific, thrown into a discussion with the intention of describing some kind of emergent social essence. Lawrence Kramer defines culture in *The Thought of Music* as "the loose assemblage of meaning-giving practices—values, beliefs, customs, habits, forms of imagination and representation, and so on—characteristic of communities small or large".<sup>1</sup> This definition suits this thesis well: it is focussed on meaning rather than artefacts, and its use of the concept of the assemblage implies an ontological dynamism: it is fluid and reflexive. Culture, as an assemblage, emerges from these meaning-giving practices: interactions between people and between objects.

Performance articulates a particular something (or somethings) within a particular culture, and it does so in a way that produces individual results depending on each individual perspective. Additionally, performance has a hand in creating and curating culture. Performance, as a practice, engages with what has gone beforehistorical resonances-with the potential of affecting what is to come. Culture, that fluid yet distinctly abstract something, results from the repeated conversations and ensuing negotiations between practices, objects, and persons. Culture is different from every individual vantage point within its wide-reaching coverage. Similarly, each practice/object/person is different depending on which practice/object/person is engaging with it. Performance is rife with complex interrelationships: multidirectional and fluid exchanges of signs and symbols, all bearing distinct relevance. What the audient takes from a performance is not necessarily what the performer puts in, what the performer puts in is not necessarily what the composer intended. What one audient<sup>2</sup> takes from a performance is not necessarily the same and what another takes.

Performance in the musical sense is an interesting case under Kramer's conception of culture. Each component within a performance, being semiotically porous, interacts with each other thing. Take the example of a violinist performing a solo work in a concert hall. The violinist is, in this instance, a human performer.<sup>3</sup> They

<sup>&</sup>lt;sup>1</sup> Lawrence Kramer, "The Cultural Field: Beyond Context," in *The Thought of Music* (University of California Press, 2016), 89.

<sup>&</sup>lt;sup>2</sup> I use the term audient here to refer to a singular audience member, in a paradigm similar to the object-subject pairing. This distinction, between audient and audience is described in the ensuing chapter.

<sup>&</sup>lt;sup>3</sup> Diagonal View, "Robot Violinist," YouTube, 2008,

https://www.youtube.com/watch?v=EzjkBwZtxp4.

have with them a violin and a bow which comprise a musical instrument.<sup>4</sup> They are on stage in front of an audience. There are a number of meanings we can infer from this scenario, perhaps from past experience or general cultural knowledge. We can infer that the performer is a skilled performer: they possess a skillset that is positively valued by (at least some of) the audience, who have likely paid money to be present. We can infer that the performer will play the violin, and that their skillset is likely related to this instrument. With the presence of the violin, we perhaps recall past experiences with other violins and violinists: the historical resonances of the instrument are brought to mind, echoing performance practices, pieces, older composers, and different traditions. Each person in the audience has a different past experience with violins and violinists, and thus each recalls these resonances in a way that is individual to their experience. When the performer plays the violin, their body interacts with the musical instrument, producing sound. This, when experienced by the audience members, interacts with their past experiences, and more broadly, interacts with their cultural understandingsomething like a metaphysical sympathetic resonance. What is necessary to remember is that before the violin was in the violinist's hand on this particular day, and before the audience members had tickets to the concert, the violin was (and continues to be) a cultural object-an object that carries specific cultural values and meanings. The performer, too, plays a specific role in the formation of cultural values and meanings, through their continual dialogue with the culture. This is not a unidirectional exchange however-it is neither linear nor forward-moving. It is definitively non-linear, both temporally and spatially.

The role of the above example is to begin to elucidate the kinds of cultural processes inherent in performances, and, hopefully, to begin to imagine interactions other than those mentioned above. It is, however, somewhat

<sup>&</sup>lt;sup>4</sup> For the sake of the argument, let us consider both the bow and the violin a part of the singular musical instrument. I understand however, that the violin itself could be considered the musical instrument, and the bow a secondary utility, or some other status of object.

incomplete in depth, and I will return to it in proceeding chapters. While it is fresh, however, I should define its relevance within the scope of this thesis.

## 1.1 Outline

Primarily, this thesis is concerned with gesture—physical gesture, to be precise and how this gesture informs our readings of performance, at a slightly higher level, within the context of the cultural text. It asks the question: how does the gesture of the violinist in the above example inform our understanding of musical meaning in various cultural contexts? At the highest level, this thesis comprises three cascading points of inquiry:

- 1. How does information flow in performance?
- 2. How is this information flow to be re-considered compositionally?
- 3. How can we talk about this information flow in useful, analytical terms?

When I talk about information flow, I am talking about interactions between objects, practices, and people, that accumulate to create and transform culture. This information can comprise a number of things: data in the form of what is seen or heard in performance, as well as data pertaining to cultural understandings of the applications of the visual and sonic gestures. The flow of information is focussed on how the cultural meanings of these things affect the momentary experience of the things, but also the holistic momentary experience of the performance. I am interested in cultivating a deeper discussion around the objects/practices/people in performance, and how they work together or create tension amongst each other.

Secondly, I offer some recent compositions, including works of mine and works of others within the New Music field, that show how gesture can be reworked in a range of contexts. I present the argument that for the audient, gesture is typically strongly coupled to sounding result, due to past experiences leading to anticipatory responses, and through obvious cause-and-effect linearities introduced by these past experiences. Exploring how these understandings of gesture-sound relationality can be categorised within a newly formed model—the model of scalable contexts, I work backwards from the model, placing the works in relation to it based on their application and re-appropriation of the physical gesture in relation to sounding result. The interest here lies within the discontinuity of gesture and expectation in various points within the contexts outlined by the model, shifting the focus onto the processes contingent in forming cause-and-effect chains.

Finally, I propose a taxonomy of terms useful for the analysis of gesture in musical performance practices, specifically focussed on uses of gesture that creatively readdress meanings derives from anticipatory responses within the cultural context.

Collectively, these points of inquiry coalesce to a meaningful starting point from which we can consider the way physical gesture and sounding result interrelate in musical performance practices, from a variety of perspectives within the broad cultural context.

### 1.2 Model of Scalable Contexts

In order to discuss how information flows in performance, there is a need to formulate some kind of working model of the agents and factors in performance. I propose a reflexive model of gesture in culture that is non-structured.

This thesis is not concerned primarily with musical knowledge, but rather how musical knowledge and physical gesture interact in a performance to create meaningful experiences. The mechanics of our musical knowledge acquisition act as a jumping-off point, from where we can begin to consider how culture, people, and objects interrelate in practice. Musical information—that which precedes musical knowledge—exists in various co-dependent, concurrent states. Initially, it comprises what we hear, what we see, and what we feel—it is ontologically bound by sensory experience. Attending to this sensorial information leads to the lowest level meaning that can be derived from musical information. The meaning resides

in the experience, as the experience and meaning are one and the same, a kind of *expérience réduite*.<sup>5</sup>

Further meaning can be derived from this information, when it is considered in a wider context than the body of the performer. Considered culturally, what we see, hear, and feel (in the aesthetic sense) in a performance can have the effect of calling upon a number of references; bringing to mind past experiences and cultural artefacts. Each performed moment refers to what we have seen, heard, and felt in previous situations, thus bringing expectation and/or anticipation into the equation. These references are situated within the audient's lived experience, although this does not necessarily mean that the audient has undertaken the specific action. Musical information can also refer to information that we have not experienced, but with which we are familiar, or which we have neither experienced nor are familiar with, but are able to comprehend due to our having-a-body. Such a case presents itself in musical performance, where the audient's familiarity with some form of gestural input leads to their expectation of a particular sounding result, or their inference of some hazy anticipated result, where they are not familiar with the *particular* gesture in question. This having-a-body brings rise to a broader meaning derived from this musical information. This meaning is not engaged within the cultural context of music-making, insofar as it directly relates to previously learned responses to musical stimulus, but we are still able to make sense of it perhaps empathetically (sharing the attribute of having-a-body with the performer), or the musical information making sense at a cultural level broader than music-making itself.

It will become apparent that these contexts are not discrete in practice. They are distinctly porous in boundary: amorphous, or perhaps polymorphous. To a certain degree they are all components of a greater whole—that whole being the third-

<sup>&</sup>lt;sup>5</sup> '*Expérience réduite*' refers to Pierre Schaeffer's concept of *écoute réduite* or 'reduced listening'. This mode of listening prioritises a focus on the qualities of the sound, regardless of their source or semantic content, treating sound as sound.

order context. The audient should be thought of as a free agent, able to move between the various contexts presented during performance as their relation to the musical information directs them, and able to simultaneously inhabit multiple contexts. Importantly, their situation within the contextual topology depends on which information they are able to decode. This situation is not strictly a 'selfsituation'; rather, the audient is directed by their ability to decode and their openness to drawing upon referents, both of which are heavily influenced by the degree and placement of the audient's focus. Musical information is thus multivalent, leading to multiple possible readings alongside a diverse and overlapping spread of reference and relativity, even within the audient's singular experience.

It is necessary to view the audient as historically individuated: the word 'audient' representing a similar unit, where each actual audient brings a slightly different knowledge base to each performance. Each person who engages with a performance is considered an audient, and in each performance, each audient moves through the various levels of context freely and independently.

This model of increasingly widening contexts centralises the audient, to the degree that is places all actors within the system on the same hierarchical plane. The audient is not only receptive in the performance, as they play a role in the formation of culture. This recursively informs their own and others' understandings of culture. The model extends upon previous models of information flow in musical performance, in its consideration of the ontological processes of musical meaning at various scales. It also provides a concrete basis from which we can consider the roles of visual gesture and sonic gesture within the performer-audient system.

Visual gesture and sonic gesture are both objects in their own right, but they can also be considered as a unified object. Rolf Inge Godøy talks of the 'gesturalsonorous object',<sup>6</sup> in which the two are considered bound together. Thus, it follows that as a perceptibly singular object, they should be analysed as such. While the ontological and epistemological concerns of the unification of what is seen and what is heard are discussed in detail in the next chapter, there are a number of regards to be held from the outset. Visual gesture and sonic gesture are two objects that can each be experienced without the other and can also be experienced as a unified and correlative system. While the relation between the two objects is perceptibly present, each object within the system maintains the ability to be removed from the system and maintain a its singular being-ness.<sup>7</sup> This characteristic means that these relations must be fluid and malleable, and potentially temporary. 'Malleability' summarises a key concern of this research: how can the relationship *between* visual gesture and sonic gesture be bent? Indeed, can it be redirected altogether?

Musical information, in the form of visual and sonic gestures, flows from the performer to the audient, through various channels, conceived here as contexts. This research is explicitly focussed on understanding the roles these contexts play in regard to musical information, and furthermore, how they might be dynamically mediated in performance so as to displace the notion of cause-and-effect.

The model, as previously discussed, comprises three distinct intersecting contexts.

- 1) Body–Instrument
- 2) Performer-Score
- 3) Practice–Culture

<sup>&</sup>lt;sup>6</sup> Rolf Inge Godøy, "Gestural-Sonorous Objects: Embodied Extensions of Schaeffer's Conceptual Apparatus," *Organised Sound* 11, no. 2 (2006): 149–57.

<sup>&</sup>lt;sup>7</sup> This notion of singular being-ness both within and outside of the system is called 'exteriority'. The concept is discussed in more detail in the upcoming chapter.

The three contexts are not territorially distinct. The body–instrument context resides within the performer–score context. The performer–score context resides within the practice–culture context. Thus, the practice–culture context comprises the entire territory.<sup>8</sup>

### **1.3 Motivations**

Typically, my works are not focussed on extra-musical gestures: there is very little gesture-mapping technology, or notational practices that extend directly to the body. This is the case, in spite of many of my favourite recent works exploring these ideas. I am explicitly interested in where gesture meets sound-that incalculable moment where physical kinetic energy is converted into sound waves--and what that relation means. How do we understand this relationship, and does our understanding inform future experiences of similar gesture-sound instances? How does our experience of gesture and sound relate to our broader cultural experiences? My intention here is not to extend the gestural possibilities in musical performance; I am not pushing towards a wider gestural vocabulary, in a similar fashion to extended techniques, which is not to say that that isn't an exciting venture to me. My intention is to broaden our understanding of the more commonplace gestures-those that we are familiar with, have been working with for decades (if not centuries). Perhaps these commonplace gestures can be saturated with more meaning, or maybe we can heighten our awareness of their presence and ongoing role in musical comprehension.

<sup>&</sup>lt;sup>8</sup> Territory, in borrowing the language of Deleuze and Guattari

# 2. Model of Scalable Contexts

## 2.1 The model as assemblage

The model of scalable contexts, as outlined previously, proposes a Russian dolllike semi-structure from which we can better visualise and analyse the transmission of meaning and experience in musical performance. The model is largely based on the idea of the *assemblage*. In *Assemblage*, George E. Marcus and Erkan Saka provide something between a working definition and reading list for the concept of the assemblage as a social theory.

> Assemblage is...a resource with which to address in analysis and writing the modernist problem of the heterogeneous within the ephemeral, while preserving some concept of the structural so embedded in the enterprise of social science research. Indeed, the term itself in its material referent invests easily in the image of structure, but is nonetheless elusive. The time-space in which assemblage is imagined is inherently unstable and infused with movement and change. Assemblage thus seems structural, an object with the materiality and stability of the classic metaphors of structure, but the intent in its aesthetic uses is precisely to undermine such ideas of structure. It generates enduring puzzles about 'process' and 'relationship' rather than leading to systematic understandings of these tropes of classic social theory and the common discourse that it has shaped.<sup>9</sup>

The assemblage thus lends itself well to musical and cultural applications. Music is by nature ephemeral and dynamic.<sup>10</sup> Most importantly, it is referentially multiplicitous. The assemblage, as mentioned, is unstable and unfixed in relation to a specific time-space. In the context of culture—that which precedes and outlives the momentary—it is important to note that the assemblage is temporally

<sup>&</sup>lt;sup>9</sup> George E. Marcus and Erkan Saka, "Assemblage," *International Perspectives on Autoethnographic Research and Practice* 23 (2018): 102.

<sup>&</sup>lt;sup>10</sup> I will not argue here that music tends towards the assemblage more than it does the object as such, although I think such an argument is tenable.

polyvalent. Just as it exists in multiple spatial scales, it exists in multiple temporal scales.

In the book Assemblage Theory, Manuel DeLanda undertakes a critical reading of Deleuze and Guattari's concept of the assemblage. From the very beginning of the text, DeLanda outlines the numerous definitions offered by Deleuze and Guattari, pointing out that the assemblage is presented numerous times in varying philosophical contexts.<sup>11</sup> DeLanda unpacks a number of the qualities of the assemblage as applied in practice. There are three qualities that hold particular importance for the construction of the model of scalable contexts. Firstly, he discusses the quality of emergence. Emergence, or emergent properties, come into existence from the interaction between parts within the assemblage. These parts need to be heterogeneous, and able to maintain their being-whole if removed from or considered outside the context of the assemblage. The assemblage does not supercede the object ontologically, rather it allows for its existence within and outside of the assemblage's own context. This quality of remaining operable beyond the confines of the assemblage is called the *exteriority*.<sup>12</sup> Emergence in the model of scalable contexts describes the dialogic processes between heterogeneous actors, objects and past references-musical persons, musical objects, musical pasts-extant in the performance as it occurs moment by moment. These qualities are typically fluid, and are the basis of the formation of culture, as defined and unpacked in the introductory chapter. The idea of the assemblage provides a strong conceptual foundation for the discussion of the abstract "processes and relationships" 13 mentioned above, and inherent in the formation of musical meaning. Emergence is used throughout this thesis in order to identify the results of relations between various objects in practice. For example, the discussion of the way the various aspects of drag performance worked together to tell a story

<sup>&</sup>lt;sup>11</sup> Manuel DeLanda, "Introduction," in Assemblage Theory (Edinburgh University Press, 2016).

<sup>&</sup>lt;sup>12</sup> Manuel DeLanda, "Assemblages and Human History," in *Assemblage Theory* (Edinburgh University Press, 2016).

<sup>&</sup>lt;sup>13</sup> Marcus and Saka, "Assemblage."

demonstrates how the performance *emerges* from these aspects being present in relation to each other. Performance, in general, emerges from interactions between the various objects present.

Secondly and relatedly, there is the idea of the assemblage as *collective memory*. In the text, DeLanda describes human society as an assemblage, which has the ability to form a collective memory, as the constituent parts (humans) are able to store past experiences, and these experiences are able to be called upon afterwards.<sup>14</sup> The example application DeLanda gives analyses the punitive functions of intercommunication: members of society remember (or store) their experiences with others, and if an experience is poor, they may recall this experience in conversation at a later time, impacting the reputation of that person (or those people) who instigated the negative experience.<sup>15</sup> Thus, the assemblage performs the function of storing personal interactions. The idea of collective memory in the context of this thesis acts to provide some kind of basis for the moment-bymoment understanding of gesture in performance and how it refers to and causes the audient to recall past experiences. These past experiences are relative to the audient, relative to the performance practice, and relative to the culture as most broadly conceived, because collective memory is that which comes about due to emergence. Collective memory is further unpacked and developed by Rolf Inge Godøy, Marc Leman, and Arnie Cox within the realm of embodied musical cognition. This literature will be discussed as this chapter unfolds.

Thirdly and finally, the notion of *historical individuation* provides for multiple versions of an equivalent part in the assemblage, maintaining that these multiple parts carry different histories, and are thus independent of each other. This is such, in the way that we can talk of a human being comprising a thing that displays particular physical, mental, emotional, and social qualities, while also being able

<sup>&</sup>lt;sup>14</sup> DeLanda, "Assemblages and Human History."

<sup>&</sup>lt;sup>15</sup> DeLanda.

to talk of a particular human being—the term 'human' can represent a faceless unit, or a particular human individual; myself, for example.<sup>16</sup> This speaks more to the typological concerns of this thesis: how we define the audient in the context of performance, and how we deal with the subjective nature of each audient's understanding of the performance. The term 'historically individuated' nicely packages the notion that each audient has unique knowledge and experiential bases, which they bring to the performance. These bases define how the audient interacts with and understands the various parts of the performance assemblage. One of the most salient affordabilities of the model of scalable contexts is its ability to accommodate the virtually infinite scale of subjective experience in musical performance: a notion of expansive subjectivity.

Already, the assemblage has been applied to music in order to understand largescale abstract cultural processes of meaning-making. In 'Music and the materialization of identities', musicologist Georgina Born describes the musical object as a 'constellation of mediations'.<sup>17</sup> Rather than focussing on the emergence and transactions between autonomies within the assemblage, Born applies the concept to describe the manner in which a "constellation of mediations"—ways in which people engage in music/music-making—can synergistically materialise musical identities.<sup>18</sup>

Further, Mark Reybrouck conceives of a model of the musical 'user' as an adaptive device in his article *Music cognition and the bodily approach: Musical instruments as tools for musical semantics.* Herein, he describes his approach to the construction of his model of musical understanding as related to instruments, and their use as knowledge acquisition tools. He introduces this idea using terms borrowed from cybernetics theory, mentioning devices, adaption, and most notably, feedback.

<sup>&</sup>lt;sup>16</sup> DeLanda.

<sup>&</sup>lt;sup>17</sup> Georgina Born, "Music and the Materialization of Identities," *Journal of Material Culture* 16, no. 4 (2011): 377.

<sup>&</sup>lt;sup>18</sup> Ibid, 378.

Reybrouck takes this idea of dialogue—at least in the mechanical sense—and applies it to musical performance situations, formulating a theory of the musical user (performer, composer, or audient) as an assembly (in cybernetic terms) that possesses numerous sensory abilities, and that utilises these abilities to make sense of *and feed back* into the emergent processes inherent in musical information flow.<sup>19</sup> While this is not precisely an assemblage-directed notion of musical performance, elements of it do come close to what I am seeking here.

#### 2.2 Gesture and Gestural Relevance

Of course, not every gestural-sonorous object relates to another to the same degree. The organisation of gesture, as with almost every other parameter in musical composition, is contingent on its ability to convey musical meaning within the relevant temporal context. Stefan Östersjö's Contemporary Music Review article, 'Go to Hell: Towards a Gesture-Based Compositional Practice', undertakes a performer's analysis of work for guitar by Rolf Riehm, qualitatively analysing rehearsals with the composer present, and exploring the various layers present in works of this nature. He further agrees with the points raised by Godøy and Leman separately, and adds that "intention is projected to music in the same way as in other social interaction"<sup>20</sup>—the point here being that gesture has the inherent ability to communicate culturally coded meaning. Of particular note is his discussion of continuity and discontinuity in the gesture-sonic correlate, and how this relates to a performer's understanding of the micro-, meso-, and macrotextures informing teleological flow in the work. Östersjö discusses a particular case in Riehm's piece, where the performer is instructed to lift the guitar off their body and shake the instrument backwards and forwards. This physical gesture

<sup>&</sup>lt;sup>19</sup> Mark Reybrouck, "Music Cognition and the Bodily Approach: Musical Instruments as Tools for Musical Semantics," *Contemporary Music Review* 25, no. 1–2 (2006): 59–68, https://doi.org/10.1080/07494460600647451.

<sup>&</sup>lt;sup>20</sup> Stefan Östersjö, "Go To Hell: Towards a Gesture-Based Compositional Practice," *Contemporary Music Review* 35, no. 4–5 (2016): 481.

asked for by the composer doesn't result in a proportional shift in sound.<sup>21</sup> Here, it is not so much a gestural-sonorous relationship that is being asked for, rather one based in the gesture's ability to reference a cultural context. Gesture affords the composer the ability to employ performative archetypes, which exist to engage the performer in the cultural context purely visually. However, the gesture is still particular to the instrument, and thus the performer-instrument apparatus (to borrow Timothy McCormack's terminology)<sup>22</sup> must be considered holistically.

Perhaps helpful here is Sally Jane Norman's discussion of gesture, borrowed from dance historian Jean-Claude Serre. Through Serre, Norman provides a taxonomy of gesture and action, in which the discussion of gesture at a high level becomes clearer:

> teleokinetic gesture is shaped and given meaning by task-related objectives that determine efficient spatial relations between individuals, objects, and the environment; semiokinetic or communicational gesture arises from relations between an individual and a social milieu; morphokinetic gesture consists of motor activity aimed at producing gestural forms savoured for and of themselves as spatial and temporal inscriptions.<sup>23</sup>

Herein we get a glimpse at the inner workings of gestures in an abstract manner, and how they might be seen to relate to individual understanding over time, reflexively. Gestures allow a series of diverse potentialities of meaning, depending on how they are understood by the audient, and these potentialities signify different gestural-sonorous relationships.

Godøy also discusses the use of gestural-sonorous objects at the micro-, meso-, and macro-level. Regarding the meso- and macro- in particular, it is clear that

<sup>&</sup>lt;sup>21</sup> Östersjö.

 <sup>&</sup>lt;sup>22</sup> Timothy McCormack, "Instrumental Mechanism and Physicality as Compositional Resources" (University of Huddersfield, 2010). This text is discussed in further depth later in this chapter.
 <sup>23</sup> Sally Jane Norman, "Contexts of/as Resistance," *Contemporary Music Review* 32, no. 2–3 (2013): 275–88.

these, even if only referential to real-world, performative gestures, impart meaning, as the listener understands these objects in an embodied manner. He continues to make the point that these gestures, instrumental or not, are socially learned and robust even amongst novices: an audience member unacquainted with the particularities of an instrument is, in many cases, still able to anticipate sonic results from gestural inputs.<sup>24</sup> This point, echoing back to Leman and Cox, is a central tenet in the understanding of cultural references encoded in gesture.

What needs to be contended with here are the motions and motives that propel the audient through these various contexts. We must not think of gestures so much as having a hierarchy, but rather having scalable contexts of relevance, this relevance shifting from moment to moment as the focus of the audient is drawn in various directions of understanding. If we accept the idea that each audient has a unique knowledge base, then it should follow that their applications of this knowledge base in the moment-to-moment of performance also have unique aspects.

The nature of musical experience, including anticipation of sounding result from gesture, is notably fluid and notoriously evasive of concrete descriptions. However, it is not so fluid that it is completely unique for each individual experiencing it. Certainly, there is some element of shared musical experience resulting from broad cultural understandings and enculturated, phenomenologically-focussed readings of performance.

<sup>&</sup>lt;sup>24</sup> Godøy, "Gestural-Sonorous Objects: Embodied Extensions of Schaeffer's Conceptual Apparatus."

#### 2.3 Body-Instrument

#### 2.3.1 Body and Bodily Gesture

Perhaps we are finally willing to accept that the bodies playing the music are part of the music, that they're present, they're valid and they inform our listening whether subconsciously or consciously. That it's not too late for us to have bodies.<sup>25</sup>

The above sentiment from the closing passage of Jennifer Walshe's article, 'The New Discipline Manifesto', goes far in summarising my recent attitude—and indeed, the attitudes of many around me—towards the role of performance and performing in New Music. I have become enamoured with the pursuit of understanding precisely how performers "perform". What is happening physically when the intention to create sound is parsed into a physical action? Why is one mode of production chosen over another, where there are choices to be made?

There is, rather conspicuously, no mention of the performers' instruments in this quote from Walshe. The bodies of the performers do indeed inform our listening, for they are the instigators of the forces enacted upon sounding bodies, they are the technicians whose nuanced manipulation of these forces elicits a countless multitude of different sounds, with the often barely perceptible tweaking of any of number of parameters. Having noted this, I would like to attempt something of a reconception of Walshe's statement in an effort to situate the instrument *alongside* the body.

It is not that the body acts upon the instrument, nor that the body sits somewhere above the instrument in a hierarchical chain of performance, but rather that the performer's body and the instrument are two components of a larger system. This

<sup>&</sup>lt;sup>25</sup> Jennifer Walshe, "The New Discipline Manifesto," Borealis Festival, 2016, http://www.borealisfestival.no/2016/the-new-discipline/.

system is reflexive, comprising a number of potential outputs dependant on input, as is every system. This point is made by Timothy McCormack in 'Instrumental Mechanism and Physicality as Compositional Resources': "an instrument must first be held by a human before it is that instrument."<sup>26</sup> This is not to say that the human exists above the instrument in some kind of hierarchy; rather, it is to say that the instrument's being-an-instrument emerges from the relation between the instrument and the human. Similarly, the performer does not become a performer-that is, a body that performs-until they are present in a performance situation. The contexts that things are placed in helps to define their cultural significance. McCormack's argument, while ultimately different to mine, brings with it a number of similar caveats-notably, the cultural scope-and resides within a relatively similar context. He describes in fine detail the ways forces interact, especially the relationship between physicality and the instrument. He argues that it is not a body enacting forces upon an instrument, but rather, initially soundless forces acting and reacting in relation to each other to create sound. "The body exerts a force - the instrument provides the resistant space for this force to take form."27 In other words, each of the two cannot be considered exclusive of the other.

As a composer, I also find continued interest in the spatiotemporal aspect of gesture: how gestural and bodily configurations change over time, and what these changes signifies to the audient. There are a number of things to be unpacked here, each to some degree mutually inclusive of the other. The configuration of the performer's body, in the above order, is to no degree the absolute beginning in the process of communication of musical intention from the performer to the audient. The initial configuration of the body is influenced by a number of things: the instrument itself, the acquired performance practice, whether the instrument will be used at all.

<sup>&</sup>lt;sup>26</sup> McCormack, "Instrumental Mechanism and Physicality as Compositional Resources," 5.

<sup>&</sup>lt;sup>27</sup> McCormack, 12.

It is also influenced by what the performer is about to play: will the performer need to strike the instrument with a large amount of force? Are they pursuing quiet sounds, and using their body to set the stage for an introspective soundworld? Before there has been any intentional sound, a number of choices have been made, each resulting in a somewhat different "meaning".

The *changing* configuration of the body over time offers even more in regard to the musical meaning. A sequence of various bodily positions—a gesture—should be considered in relation to the instrument. The progression through these various positions is fluid, each point resulting in a differing set of forces being enacted upon and reacted to by both the body and the instrument reflexively. These have the effect of signalling expected sounding results, as they are ultimately embodied—understood by the audient due to the audient's having a body.

Marc Leman discusses this empathetic response, favouring the idea that embodied meaning in music, while an enculturated phenomenon, is nonetheless present.<sup>28</sup> As previously discussed, each audience member possesses a certain ability to parse gestural input into expected sonic result, however this ability to parse the gestural input is strengthened when viewed from an enculturated perspective. Leman's chapter in *Musical Gestures: Sound, music, and meaning* focuses on a qualitative and quantitative analysis of affect and embodiment in performance, utilising a tripartite methodology. The analysis undertakes a situational review of a performance from first-, second-, and third-person perspectives. He considers gesture from the viewpoint of the performer, the embodied response of the part of the audient, and a qualitative observation on the part of a second-person viewer (in this case, Leman himself). It becomes clear that there is a direct correlation between the movement of the performer, both at a meso- and macrolevel, and the movement of the audient.<sup>29</sup> This can occur even in cases where the audient is not

<sup>&</sup>lt;sup>28</sup> Marc Leman, "Music, Gesture, and the Formation of Embodied Meaning," ed. Marc Leman and Rolf Inge Godøy (New York City: Routledge, 2009), 126–53.

<sup>&</sup>lt;sup>29</sup> Leman.

specially trained in the modes of sound production related to the instrument in question. This speaks rather directly to the notion of collective memory: these empathetic responses emerge from the dialogues between cultural parts.

This notion of the empathetic response is further discussed in Arnie Cox's book Music and embodied cognition. Cox provides a theory of musical comprehension<sup>30</sup> that is situated between the performer and the audient. The *mimetic hypothesis* proposes that part of audient response to the performer is mimetic, and thus embodied. The performer transmits aural and visual stimulus, which the audient imitates in some way. This is not necessarily a case of one-to-one matching of the performer's bodily gesture by the audient (this is almost never the case), it is rather more subtle. Cox puts forward two main categories of response: mimetic motor action (MMA), and mimetic motor imagery (MMI). Mimetic motor action describes a response that results in external physicality from the audience, a literal bodily response to the stimulus. Mimetic motor imagery, on the other hand, is the imagined response to the physical stimulus. It comprises an understanding and parsing of the physical gesture of the performer, without requiring a resulting action on the part of the audient.<sup>31</sup> The external-internal divide here is further broken down into a variety of mimetic responses. The audient may respond intramodally, imitating the performer in a rather one-to-one manner. In this case, the audient is likely familiar with the sound-producing modes of the instrument, although not necessarily a trained practitioner. The imitation may also be *intermodal*, where the audient responds perhaps sub-vocally (to state the example given by Cox), imitating a number of parameters represented in the sound—pitch and melody, rhythm, and timbre. Finally, the audient may respond amodally. The example provided by Cox is the "abdominal imitation of the exertion dynamic

<sup>&</sup>lt;sup>30</sup> Arnie Cox, *Music and Embodied Cognition : Listening, Moving, Feeling, and Thinking / Arnie Cox.* (Bloomington: Indiana University Press, 2016),

https://doi.org/http://ebookcentral.proquest.com/lib/VUW/detail.action?docID=4674260. <sup>31</sup> Cox.

evident in sounds"<sup>32</sup> The latter two responses, particularly the final response, account for the imitation of sounding results in audients who are not familiar with the sound-production modes particular to the instrument. It is necessary to note in cases of little-to-no familiarity with the sound-production modes that there is some degree of inference of the internal (and thus invisible) forces based on the external forces and their resulting sound.<sup>33</sup>

Taking up McCormack's main tenets again, the forces resulting in sound must also be understood *within a context*. The context of the performer–instrument is nested within a much larger context: that of culture. It seems that Cox's accommodation of the embodied and empathetic understanding of sound as visual and sonic counterparts is, at least in part, referring to the construction of cultural traditions around performance practice. Performance practice comprises a history of mapping various actions in various modalities to specific sounding results. These historical resonances go far to inform our understanding of performance, as they set a precedent for apparent cause-and-effect relationships between systemic input and output. It is herein that I would like to make an addition to McCormack's idea of sound as tactile.<sup>34</sup>

Sound is tactile because, at least in the context of instrumental performance, it comprises the residua of forces enacted *by a human* within the instrument-body apparatus. The tactility here exists in the outward perception of the sound, the MMA or MMI, the recoding of gesture and sound result into something that is physically embodied by the performer. It is tactile not only because of the truism of sound as physically manifest particles in the air set in motion,<sup>35</sup> but also because sonic outputs bring with them responses that, at the very least, reference physical

<sup>&</sup>lt;sup>32</sup> Arnie Cox, "Embodying Music: Principles of the Mimetic Hypothesis," *Society for Music Theory* 17, no. 2 (2011): 8.

<sup>&</sup>lt;sup>33</sup> Sound being a force itself, but one that exists as a result of these gestural inputs.

<sup>&</sup>lt;sup>34</sup> McCormack, "Instrumental Mechanism and Physicality as Compositional Resources," 9.

<sup>&</sup>lt;sup>35</sup> McCormack.

modes of production, and at most result in enacted sensorimotor gestures within the audient.

#### 2.3.2 Sounding Gesture

It seems necessary at this point to arrive at a more concrete understanding of what 'gesture' means in regard to sounding result. The idea of the 'sound-producing gesture' continues to come up in academic literature of various musical disciplines, notably in Rolf Inge Godøy's 2006 Organised Sound article 'Gestural-Sonorous Objects: embodied extensions of Schaeffer's conceptual apparatus'. Here, Godøy bridges embodiment and music perception studies with the early acousmatic theory of Pierre Schaeffer, where he argues for the extension of Schaeffer's concept of the 'sound object' (objet sonore) to include the inherent (physical) gesture felt in the experience of music. Sound is ultimately residual, if ephemeral. In many cases, it references the composite forces enacted in its creation. Schaeffer's typology already tends to refer to sound-morphologies in a gestural manner, such as struck, hit, and bowed, and thus the inclusion of gesture-also seen as a makingphenomenological of the theory-is logical. <sup>36</sup> However, an important philosophical discussion must here be inserted. If gesture and sound can be thought to be compounded into one object, where does the ontology of this object lie? For the sake of analysis, while it is necessary to make individual objects discrete from one another, this is not phenomenologically the case. Gestural-sonorous objects are fluid-running into and out of one another-and thus pairing gesture to sound is not always a simple task. Gestures do not always directly relate to their concurrent output sound: some are anticipatory, some reactive. As we already know, sound occurs as the result of an input into a system. If gesture—a summary of forces enacted upon a system—is seen as the "input" in this situation, then it follows that the sound occurs after or *as a result of* gesture.

<sup>&</sup>lt;sup>36</sup> Godøy, "Gestural-Sonorous Objects: Embodied Extensions of Schaeffer's Conceptual Apparatus."

When we talk of gestural-sonorous objects, we talk of delimited objects which may comprise temporally distinct intermodal counterparts.<sup>37</sup> Gestures and their sounding counterparts flow indiscretely into and out of one another. Further, they operate multifariously, sometimes as units, sometimes as groupings comprising a larger unit. These delimited objects, and the processes by which they come to be defined as distinct, come to be so dialogically. It is this interaction between the body and the instrument, what McCormack calls the "resistant space",<sup>38</sup> that I am referring to when discussing the first territory of this performed assemblage. This resistant space comprises the 'performer'—the synergy of the body and the instrument—and as such, to further Walshe's argument, we should not focus solely on one and/or the other, but rather the emergent properties of the two in dialogue with one another.



Figure 1: the performer context comprises the body and the instrument

### 2.4 Performer-Score

Moving beyond the scope of the performer, it is important to understand the situation of this body-instrument assemblage within a slightly broader context: that of the performer-score. In as much as the performer comprises distinct parts that interact to create an emergent whole, so too does the score. The score,

<sup>&</sup>lt;sup>37</sup> Godøy.

<sup>&</sup>lt;sup>38</sup> McCormack, "Instrumental Mechanism and Physicality as Compositional Resources."

typically understood to be a codification of certain intentionalities to be enacted over time by a performer, is *itself* an assemblage. The score comprises a history of such performative codes in interaction with the composer, who set these codes in relation to each other. As such, what is presented here, in the understanding of the performance practice—the performer-score assemblage—emerges from the interactions between two smaller, exterior assemblages: performer and score respectively.<sup>39</sup>



Figure 2: The performance practice context comprises the performer and the score

William Echard proposes an understanding of the technical and technological faculties of the body and instrument under the philosophical framework of Deleuzian 'virtual' and 'actual'. Rooted in an embodied understanding of the instrument-performer system as 'one', he goes on to address the state of the body and instrument in relation to the score during performance.<sup>40</sup> While the score presents a problematic virtuality that requires a solution through performance to

<sup>&</sup>lt;sup>39</sup> DeLanda, "Assemblages and Human History."

<sup>&</sup>lt;sup>40</sup> William Echard, "Sensible Virtual Selves: Bodies, Instruments and the Becoming-Concrete of Music," *Contemporary Music Review* 25, no. 1–2 (2006): 7–16.

become actualised, it exists in a state whereby the virtuality is unfixed. Rather than remaining in a perpetual state of becoming, the score presents a series of problems to which there are multiple solutions, bringing about a multitude of possible modes of actualisation.<sup>41</sup> It is this 'becomingness' of music that is perceived by the audient, and this problematic of ephemerality in both sound and gesture informs the ongoing sense-making of the performance therein. Ephemerality (and unrepeatability) underpin the paradigm of the instrument-human system of interaction and its transmission.

This 'becomingness' defines the notion of performance practice—the secondary degree of the model of scalable contexts. This problematic describes the processes of both music coming to be, and also those of historical resonances, within a codified or systemic paradigm. The performer (instrument-body assemblage) interacts with the score, enacting its intentionality, and in doing so, has a small but quantifiable effect on the history of that instrumental practice going forward. That effect may exist only in the moments following it: in the performance. It may also be much more lasting, continuing on to change the idea of 'practice' for that particular instrument. This is the process, as proposed by the mimetic hypothesis, by which intramodal and crossmodal responses occur—in relation to understandings of conventional gestures understood within the context of the body-instrument system.<sup>42</sup>

Historical resonances, however, may not always be present to be relied upon. The "dilemma of the performer"<sup>43</sup> has been a topic of much discussion in electronic music discourse, in various topics—performer with live electronics, new instrument design, laptop performance—wherein there has been noted a fracturing of the once all-inclusive (or at least mutually significant) roles of visual

<sup>&</sup>lt;sup>41</sup> Echard.

<sup>&</sup>lt;sup>42</sup> Cox, Music and Embodied Cognition : Listening, Moving, Feeling, and Thinking / Arnie Cox.

<sup>&</sup>lt;sup>43</sup> W. Andrew Schloss, "Using Contemporary Technology in Live Performance: The Dilemma of the Performer," *Journal of New Music Research* 32, no. 3 (2003): 239–42.

gesture, efforted input, and sonic result in live performance, with and without instrumental performers. Julio D'Escrivan discusses the concept of the "effortedinput paradigm" in musical performance, and how the button pressing, live sampling and live signal processing that is so idiomatic in electronic musical performance speaks to a new aesthetic, where the audience is gradually becoming content with a lack of visual impetus on the part of the performer. He proposes that in times to come—perhaps we are even there now—audiences will be completely content with the laptop performer making large changes to the sonic landscape with a comparatively low degree of physical input into the system. It seems that perhaps the idea of physical effort is becoming less and less direct a signifier of sonic output, pushing the paradigm further away from the centre of focus in an embodied understanding of the performer.

This stream of thought can be seen to be echoed in current aesthetics within new musical practices, both compositionally and performatively, where there is increasingly a disconnect between the physical input of the performer and the resulting sound. New Complexity, in its characteristic saturation of timespace with convoluted sounding events, presents a system where on a meso- or microlevel, the gestural-sonic object is hazy at best, although the macrolevel—that of dynamic and form—reveals to a far more salient degree the amount of physical effort that is required to perform the music. Composer Aaron Cassidy discusses a streak in his work where he employed prescriptive notation, such that the systemic input was determined but the sounding result was not.<sup>44</sup> This presents an interesting case to be discussed within the concept of the gestural-sonorous correlate, as again, it continues to soften the edges of what could be considered a discrete gesture, and raises the question of how this might be dealt with by agents within the performative assemblage (performer, audient, composer), especially regarding

<sup>&</sup>lt;sup>44</sup> Aaron Cassidy, "Determinate Action/Indeterminate Sound: Tablature and Chance in Several Recent Works," in *Facets of the Second Modernity: New Music and Aesthetics in the 21st Century*, 6th ed. (Hofheim: Wolke Verlag, 2008), 17–32.

gestural hierarchy. It becomes more and more difficult to define context (which could less abstractly perhaps be considered to be "form") when the various modes of exertion are temporally distinct, as can often be seen in his music. An example provided in his lecture *Imagining a Non-Geometrical Rhythm*<sup>45</sup> comes from the work *asphyxia* for solo soprano saxophone. In the work, the instrument is expanded into parametrically decoupled components (mouth and fingers) on separate staves, and each of these lines have concurrent "phrases" of different lengths. Ontologically, this begs the question: does the gesture exist initially on the page? Is it emergent in the process of realisation? Or, is it somehow both and neither simultaneously?

Wherever it is that the gesture exists, I argue that the understanding of gesture in relation to the performer-practice assemblage is polytemporally negotiated: firstly in terms of an intramodal understanding whereby the audient understands the physical forces present, how they relate to the codification or system of the work, and how these relate to past experiences both *from a close history*—that which just passed—as well as from a history situated further in the past, a reference that has been cultivated over many iterations of gesture-sound results.

### 2.5 Practice-Culture and the roaming audient

The broadest of the contexts within the model is culture. This context comprises everything, in short, which is to say that it should be understood as everything that is left over: when the experience is considered outside of the contexts of the performer and the performance practice. The problem in this consideration of culture is its breadth. There is a difficulty in attempting to conceive of everything that is left over, because all of these things are interlinked in the assemblage, regardless of their situation within the model.

<sup>&</sup>lt;sup>45</sup> Aaron Cassidy, "Prof Aaron Cassidy: Imagining a Non-Geometrical Rhythm [23.03.2015]," Centre for Research in New Music, 2015, https://www.youtube.com/watch?v=Va62zpUMIoE.

This should not be considered the *tabula rasa* state of musical experience, as it is not necessarily a blank slate. It must be remembered, however, that virtually no audient attends to a musical experience with an absolute-zero degree of cultural reference, recalling both Cox and Leman. Culture is present for each and every person: as Reybrouck makes clear, it defines their methods of coping with the immense data of the world,<sup>46</sup> and in turn, their coping extends outward to effort a redefinition—however slight—of the culture. Rather, this context attends to and allows for understandings of gesture in performance that might reach beyond the performance practice assemblage, into the audient's wider, extra-musical cultural experience.

What is the purpose of considering everything that is left over, when we conceive of musical experience? One of my primary motivations in the formation of this model is to deal with what was, for me as a composer, a difficult notion to contend with: that not every audient who attends a performance of a work of mine brings with them a knowledge of New Music. In fact, they don't even necessarily bring with them any exposure to Western art music at all. It is not a given that everyone understands the processes of sound-making on Western instruments, nor that they are able to immediately contend with the logic and references that may or may not be present in a work. Neither do I expect everyone to, rather; it is that this is the area that I tend to work within, and so comprises my perspective on creating music. This expansive subjectivity drives my interest in seeking out other ways of presenting content: ways that do not require prior exposure to my chosen work format. While I appreciate the argument that art is a dialogue—necessarily twoway—and that the subject should refer to the artistic object from a perspective that approaches that of the artist, it is my belief that this expectation brings with it a

<sup>&</sup>lt;sup>46</sup> Reybrouck, "Music Cognition and the Bodily Approach: Musical Instruments as Tools for Musical Semantics."

whiff of aesthetic strongheadedness, and, given an increasingly diverse and interlinked community of creativity, I do not subscribe to this.

One of the key considerations of the positioning of the audient within this model is that the audient is neither stationary nor passive in their ability to parse references. In fact, it is possible for the audient to inhabit multiple cultural contexts at once, depending on what they are able to perceive. Musical experience is rooted in temporal experience: it is, above all, linear.<sup>47</sup> Each moment in the overall experience has the potential to be held in relation to that which has come before, alongside many outward and forward references. As such, at any moment, the audient's ability to relate to the references presented holds the potential to shift contexts. This process of shifting is naturally unique to each individual performer, and to each individual performance. As such, it must be noted that, at any point, the audient is potentially unable to relate to any of the references presented in the work. When considered in the context of this thesis, however, it is clear that the audient's experience of complete irrelevance is only momentary, holding fast only until the next salient reference presents itself.

Furthermore, let us not to sell short the ability of music to reference cultural objects that sit outside the context of performance practice. Music is in many instances programmatic, referential of extra-musical concepts. Opera presents a relatively salient example, where the libretto provides narrative. However, a more musically focussed (and less semantically driven) example comes from embodiment theory in the discussion of some of the language around music. A 'leap', for example, describes a shift in frequency from something low to something relatively higher (or vice versa). This, of course, is a reference to a physical leap—an action performed by a body—wherein, we would describe the body undergoing

<sup>&</sup>lt;sup>47</sup> At least, music is temporally linear in technical terms. I acknowledge and appreciate the exploratory work undertaken to philosophise, and increasingly, to investigate the phenomenologies of horizontal, cyclic, and other non-linear conceptions of time in music.

a similar action as we would describe the frequency undergoing.<sup>48</sup> Furthermore, terms such as 'low' and 'high', which we use to describe frequency in music, are references. In the English language, at least, we have not fully developed specialised language for numerous musical idioms, and so, we have resorted to culturally understood metaphors. It thus goes without saying that the links between music and the broader cultural assemblage are deeply entrenched, and so, we must include this culture at its broadest in our model of musical performance.

Having set out this model, I present the diagram below, in an effort to concretise the dialogues that have been discussed. While the diagram is static, the processes of emergence are nonetheless clear.



#### Figure 3: the Model of Scalable Contexts

I have chosen to situate the audient, by default, outside of the performance practice. Of course, it is entirely possible that the performer has a knowledge base that situates them within the performance practice, or even, that they are intimately familiar with the instrument, placing them alongside the performer. Herein is the notion of the roaming audient. This is where the 'scalable' in the model of scalable contexts comes into play. As the performance content is transmitted, the audient

<sup>&</sup>lt;sup>48</sup> Cox, "Embodying Music: Principles of the Mimetic Hypothesis."
resituates themselves fluidly and dynamically within the performance model. As such, the contexts scale in relation to the audient's perception.

As stated, the purpose of this model is to allow for a better integration of the moment-to-moment linearities of performance. In its visualisation, we come to see that all parts within the performance assemblage bear upon each other, audient included, and so, the dialogues herein—these being necessarily circular in nature— coalesce and should not be considered completely individual of each other.

# 3. Discontinuity

The dialogic nature of the model of scalable contexts, being fluid, allows for an understanding of the flow of information in a manner that destabilises the linearity of cause-and-effect chains in musical performance, bending these flows back upon themselves. In part, this was conceived to decentralise the importance placed on subjective perception, and to provide an alternative to the communication model of performance.<sup>49</sup> It also allows for a deeper investigation of the moment-by-moment parsing of gesture and anticipated sounding counterparts, and their subsequent relations to performance practice and culture more broadly, in order to open these sites of interaction up for compositional development and deployment.

## 3.1 From Linearity, Towards Discontinuity

Cox's mimetic hypothesis, as previously discussed, provides one example of a musicological framework for the theorising of an embodied perception of music. In Cox's view, sounds are the result of physical actions within or upon a system.<sup>50</sup> This view corresponds with McCormack's consideration of gesture: that sound is a residue of performed action; emergent *from* performed action.<sup>51</sup> Taken in reverse, there is an implication here that sound refers backwards to the gesture that created it.<sup>52,53</sup> These act as the first two of Cox's principles of the mimetic hypothesis.<sup>54</sup>

GESTURE SOUND

Figure 4: the backward- and forward-referencing between gesture and sound

<sup>&</sup>lt;sup>49</sup> Charles Inskip, Andrew MacFarlane, and Pauline Rafferty, "Meaning, Communication, Music: Towards a Revised Communication Model," *Journal of Documentation* 64, no. 5 (2008): 687–706, https://doi.org/10.1108/00220410810899718.

<sup>&</sup>lt;sup>50</sup> Cox, "Embodying Music: Principles of the Mimetic Hypothesis."

<sup>&</sup>lt;sup>51</sup> McCormack, "Instrumental Mechanism and Physicality as Compositional Resources."

<sup>&</sup>lt;sup>52</sup> Denis Smalley, "Spectromorphology: Explaining Sound-Shapes," *Organised Sound* 2, no. 2 (1997): 107–26.

<sup>&</sup>lt;sup>53</sup> For a more in-depth discussion of this notion of backwards referencing, see Smalley's article, referenced above, and in particular, the sections on *surrogacy*.

<sup>&</sup>lt;sup>54</sup> Cox, "Embodying Music: Principles of the Mimetic Hypothesis."

Broadly, a linearity in musical experience can be thought of similarly to the sign/signifier form. Some musically perceptible action or object—the sign—signifies some musically perceptible anticipated result. This is to say that gestures are able to represent sound, insofar as they can be discretised, and applied to a particular sounding result. Sounds are also representative of the gestures from which they are borne, if backwardly so. Further, both gestures and sounds are able to function as representations of other social and cultural object. In the first degree, however, when considering the performer assemblage, gesture acts as a representation of the sounding object, from whence these higher-order representation-object chains—those relating to culture—take charge. Before we consider sound as a cultural referent, we should consider gesture a sonic referent.

Returning to the metaphor of the concert violinist, we can see how these different representational abilities might function in practice. Suppose the violinist moves their left hand rapidly from the bottom of the fingerboard, near the tuning pegs, towards the top, close to the bridge. This gesture might be representative of a quick leap in pitch, from something relatively low in the instrument's register, to something much higher in frequency. Another gesture involves the violinist raising their bow to the string. This could signify that the performance is about to begin. However, context must be considered here. It only signifies that the performance is about to begin *if the performance is not currently underway*. Otherwise, it is unlikely to represent this fact, and is more likely to signify that the violinist has simply had a musical break from playing. Gestures—or representations—are contextually fluid; they are multivalent. They have the potential not only to reference the sounds that they create, but also, can act as a medium through which social content is filtered and implied. Gestures hold the potential to provide the impulse necessary to incite historical resonances.<sup>55,56</sup>

An enacted gesture does not always produce a particular sounding result, however. In fact, one of the central arguments of this thesis is that current compositional practices are increasingly and intentionally exploring and breaking down the linkages between gestural input and sounding output. In the widest context, a discontinuity occurs when the link between a representation (gesture) and what it represents (sound, social fact, and cultural meaning) is broken, resisted, bent, or otherwise interrupted. The link may still be present, but it no longer exists in its *prima facie* form. Rather, the representation—that object or practice—opens itself up to a wider range of potentialities, sounding and otherwise. It is my firm belief that in coming to terms with these representational potentialities of gesture, we can expand our understanding of the continuation of musical practices and aesthetics, particularly in the realm of New Music.

## 3.2 Discontinuity and the model of scalable contexts

## 3.2.1 A reprise of the concert violinist

The concert violinist has begun their performance, they have been on stage for some time, and they are coming to a climactic moment in the composition. They are performing similar gestures as described earlier: upwards motions from the tuning peg end of the fingerboard toward the bridge, except this time the motion is considerably slower and much more fluid. Their right hand, clasping the bow,

<sup>&</sup>lt;sup>55</sup> Ole Kühl, "The Semiotic Gesture," in *New Perspectives on Music and Gesture*, ed. Anthony Gritten and Elaine King (Farnham: Ashgate Publishing Limited, 2011), 123–130.

<sup>&</sup>lt;sup>56</sup> This idea of the linear gesture seems at odds with the notion of the dialogic and inherently cyclic nature of emergence in the preceding discussion. In fact, however, they should be considered separate. As the gesture references towards the sounding result, it exists before the sounding result. This is, by nature, a linear understanding of the flow of information in the moment of musical experience. The cyclic nature of emergence relates to the context that the moment is viewed in, and is not the moment itself.

epitomises that classic climactic gesture: intense downwards pressure on the string, enough bow speed to get a rich, strong tone, and fleetingly quick changes at the ends of each bow. Their left hand continues to rise and, along with it, there is a gradual rise in frequency. Their hand approaches the bridge and immediately shoots back down to the tuning peg, only to steadily rises again. As before, the frequency rises steadily. Four or five times this happens, all the while, the bow hand remains steadfast, evoking a rich, warm tone. The left hand shoots back to the tuning peg and begins that steady rise again, but no longer is the frequency following suit. Instead, the frequency is high, and it seems to jump about as the hand moves up the string. On the whole, the frequency seems to drop as the hand approaches halfway up the string, until-still darting around-the frequency appears to rise again. No longer is the tone rich, now it is full of noise and inharmonicities. The violinist's left hand is no longer fully depressing the string against the fingerboard; instead, the performer is lightly touching the string. They are producing natural harmonics, which are being interrupted intermittently by the intensity of the bow. A condition of performance has changed, and as such, the pitch is not following the expected trajectory—that implied by gesture.

The above example illustrates discontinuity in practice. The discontinuity is not the sounding result, nor the gesture, but rather is the gestalt experience, occurring at the moment when it becomes clear that the expected result is not the result that is realised. In this instance, there are multiple concurrent discontinuities, or technically, the same discontinuity arising in several ways. Firstly, the link between what is expected from the gesture of moving the left hand up the string is disrupted. The audient sees the left hand progress up the string numerous times, resulting in a rising frequency, and expects this gesture to continue to produce this result. As such, a discontinuity exists between the gesture and that gesture's recent history. As previously stated, gesture has the ability to reference both specific sounding results *and* historical gestures. Here, the history in question is very clearly a recent history. I would nevertheless make the argument that even without the previous gestural-sonorous priming, an audient would be more likely to expect to hear the rising frequency result rather than the harmonic-noise sounding result.

#### 3.2.2 Social facts and the assemblage

I would like to return to the list of important qualities of the assemblage, as outlined at the beginning of the second chapter. Specifically, I would like to bring back to mind the idea of collective memory. Collective memory, as explained by DeLanda, describes the assemblage's ability to store facts—particularly social facts—which are spread through discourse.<sup>57</sup> This idea can be applied rather cleanly to the nature of the development of musical experiences and gestural representations. I have already discussed how we might conceive of the processes underpinning the formation of culture, and how the practices and objects that make up culture come to be considered in their specific cultural light: this process is dialogic, discursive and emergent. As such, I would simply add that these emergent processes mirror the processes behind the formation of social facts social facts being representations in themselves<sup>58</sup>—and as such, emergence and collective memory can be credited with creating and storing these malleable yet nonetheless tangible forward-focussed relations between gesture and sound.

The discontinuity has the ability to be present in a number of orientations relative to representations and results. In the above example of the concert violinist moving their left hand up the string, the discontinuity is situated between the representation (gesture) and the result (sounding output). This process of discontinuation calls upon the already-formed representation-result linkage (what was previously called a linearity) and intervenes in its realisation. This linkage however is itself a process. Social facts, and by extension, musical facts—

<sup>&</sup>lt;sup>57</sup> DeLanda, "Assemblages and Human History."

<sup>&</sup>lt;sup>58</sup> Paul Rabinow, "Representations Are Social Facts: Modernity and Post-Modernity in Anthropology," in *Writing Culture: The Poetics and Politics of Ethnography*, ed. James Clifford and George E. Marcus (London, England: University of California Press, 1986), 234–261.

linearities—should not be considered static. They are dynamic, as outlined in the opening chapters, and undergo a constant shift in form as they are re-negotiated in different contexts. This shift might be so incredibly slow as to be virtually imperceptible, but it is undoubtedly occurring. This is the nature of collective memory. These states of change and their respective velocities should be considered relative to each other. There are instances where the processes of meaning-making are uprooted, or perhaps unable to ground themselves in the experiential history of the audient. This is to say: the audient has little-to-no experience with what is being performed, and so has little-to-no knowledge base on which to call upon. In cases such as these, the representations and results are extremely loosely connected, and the connections are made in the moment. This is a case where the discontinuity refers to recent historical linearities—those which occurred perhaps only minutes or seconds previously—and so, these shifts in the nature of the linkages between representations and results are swift and almost maximally dynamic.

## 3.3 Discontinuity in composition

While gestural discontinuity as a compositional device is not unprecedented, it is a relatively recent development. This of course depends on how we frame the device in light of intentionality. It is my argument that the discontinuity has been present in composition for a relatively considerable amount of time: since at least the advent of the New Complexity. However, it is not until recently that the discontinuity has been *intentionally* present, in such complex forms. Regardless, the discontinuity has played a part in the development of compositional thought since the line between descriptive and prescriptive notation was established. This division between 'descriptive' notation and 'prescriptive' or 'action' notation has been set out extensively by Mieko Kanno.<sup>59</sup> Here, Kanno points out that descriptive notation-that which would be considered the standard in Western musical practices, which describes the intended sounding output rather than describing the action to undertake to achieve a sounding output-includes a certain number of prescriptive elements, giving the example of a trill as an action notation; a prescription. This is so, because a notated trill is "an indication of actions to be taken".<sup>60</sup> As composers increasingly utilise prescriptive methods of notation, the linkage between the representation and fact, as related to the instrument, begins to break down. Gesture represents sound, or at least an intention of producing sound. As these gestures continue to diverge from their expected sonorous outputs, however, the discontinuity becomes ever more present in the contemporary aesthetics of New Music. These gestures become a point of contention when compared to the collective memory of representation-fact linkages, and in contending with these, they exert pressure; they implement contextual shifts. As an audient becomes increasingly versed in these experiences-and I refer here mainly, but not only, to New Complexity-the context from which they perceive this musical experience shifts, and the discontinuity becomes less perceptually tangible. Herein lies the importance of the historically individuated audient: the acknowledgement of different knowledge bases within an audience.

Interestingly, the context of prescriptive notations provides ample parametric space for a discontinuity between the gesture that the performer enacts upon their instrument and the result. The discontinuity is not exclusively situated between the performer and the audient. Returning to an example provided in the discussion of the performer-score dialogue, Aaron Cassidy describes the prescriptive

<sup>&</sup>lt;sup>59</sup> Mieko Kanno, "Prescriptive Notation: Limits and Challenges," *Contemporary Music Review* 26, no. 2 (2007): 231–54.

<sup>&</sup>lt;sup>60</sup> Kanno, 235.

approach to notation in his work as a means by which to bring about this discontinuity, resulting in its presence both for the audient and the performer.<sup>61</sup> Elsewhere, Cassidy describes an approach taken in the writing of his *Second String Quartet* (2010) wherein gestural action types are placed in competing dialogue with "boundary windows", in order to encourage "unusual, unexpected, and often unpredictable materials to emerge".<sup>62</sup> Timothy McCormack undertakes a similar approach to composition in *Disfix* (2008) and *The restoration of objects* (2008), utilising multiple concurrent yet discrete layers of sound and gesture in an effort to distort the interrelation of sound and gesture when they are realised in performance.<sup>63</sup>

As composers and performers continue to, in the language of Reybrouck,<sup>64</sup> cope with an ever-expanding array of extended techniques, the audience's ability to recognise gestural-sonic correlates becomes increasingly tenuous, and D'Escrivan's idea of the "efforted input paradigm"<sup>65</sup> continues to dissipate. While I believe that we will always have the notable displays of physicality in music, in which a forceful gesture results in a forceful sonic output, these representation-fact paradigms are less intrinsically linked, perceptually speaking. This points, however, to a different notion than that in D'Escrivan's discussion of gesture, which is focussed more heavily on electronic performance and the increasing disparity between the gesture (or sound-making process more broadly) and the sounding result in electronic and

<sup>&</sup>lt;sup>61</sup> Cassidy, "Determinate Action/Indeterminate Sound: Tablature and Chance in Several Recent Works."

<sup>&</sup>lt;sup>62</sup> Aaron Cassidy, "Constraint Schemata, Multi-Axis Movement Modeling, and Unified, Multi-Parametric Notation for Strings and Voices," *Search Journal for New Music and Culture*, no. 10 (2013), 1.

<sup>&</sup>lt;sup>63</sup> Robert Dahm and Timothy McCormack, "Forcing the Catastrophe. An Interview with Timothy McCormack.," Sound is Grammar, 2010,

https://soundisgrammar.wordpress.com/2010/07/09/forcing-the-catastrophe-an-interview-with-timothy-mccormack/.

<sup>&</sup>lt;sup>64</sup> Reybrouck, "Music Cognition and the Bodily Approach: Musical Instruments as Tools for Musical Semantics."

<sup>&</sup>lt;sup>65</sup> Julio D'Escrivan, "To Sing the Body Electric: Instruments and Effort in the Performance of Electronic Music," *Contemporary Music Review* 25, no. 1–2 (2006): 188.

electroacoustic performances—that laptop musicians employ little effort in relation to the sound they are able to yield.<sup>66</sup> The physicality of the performer in New Complexity practices is much more malleable due to the expansion of the parameter spaces employed, because there are a larger number of forces to be considered holistically, opening the composite sounding result up to more complex relationships between input and output.

This can be further abstracted by the instrument in use. Bowed string instruments, for example, utilise a very transparent mode of production, wherein almost each sounding output can be linked to a distinct input parameter: a heavier bow stroke results in a bigger sound, moving up the string generally implies a higher frequency result, greater bodily exertion results in a higher amplitude output. Within this, however, there are boundaries at which the culturally learned implications of gesture begin to blur. Employing harmonic pressure in the left hand and moving "down"<sup>67</sup> the string results in a rising frequency output. The same bow pressure applied *sul tasto* and *sul ponticello* produces different amplitude outputs, alongside diverse timbral results.

Wind instruments, on the other hand, have a much more opaque input-output relationship. The clarinet, for example, appears externally to require a similar amount of physical input for a quiet sounding event as for a loud event, and only the body language and the prominence of the inward breath before the attack gives away the anticipated amplitude output. The dynamic space between the highest and lowest exertion dynamics is much less. The oboe, even more, seems to require a larger amount of internal pressure to produce a wide range of amplitudes, and so this input-output paradigm continues to retreat in more opaque territory. This of course speaks directly to the paradigms of performance—the characteristics of the system that are prescribed by the choice of the instruments. Discontinuities, then,

<sup>&</sup>lt;sup>66</sup> D'Escrivan.

<sup>&</sup>lt;sup>67</sup> By which I mean moving away from the bridge; a downward motion where frequency is concerned.

are further extrapolated from within these prescribed characteristics when their employment in composition becomes intentional.

There are a number of exciting works outside of the New Complexity sphere, that warrant discussion here, particularly because a number of the concerns addressed in this thesis are being tackled both directly and potentially subconsciously by a number of composers in wildly diverse ways. The discontinuity has become something of a calling card for a number of composers especially in the New Discipline,<sup>68,69</sup> myself included.<sup>70</sup> What continues to be most interesting to me is the malleability of the aesthetic applications of and resulting outputs of the music. Dan Tramte's approach is largely pop-culture focussed and unendingly light and witty, while Alexander Schubert's works, being still humorous at times, are considerably darker in tone.

Dan Tramte's lecture performance *Cancellation Artefacts*<sup>71</sup> is one of the most explicit examples of the theorising of what I refer to as discontinuities. The cancellation artefact occurs when a gesture is performed, and another gesture is enacted concurrently (either by the performer or by another agent), this gesture being oppositional, such that the sum of the two gestures results in a gestural nothing. This gestural nothing, however, brings with it 'artefacts', and these are the focus of the theory. One possible cancellation artefact occurs when, for example, a person is walking on a treadmill, such that their forward speed is

<sup>&</sup>lt;sup>68</sup> Discussing the New Discipline with any kind of generalised certainty is a difficult task, and is, to my mind, not useful. As such, I offer the aesthetic "category" here simply as a distinction from New Complexity, an aesthetic that is decidedly more coherent, yet still difficult to generalise. Jennifer Walshe's *The New Discipline Manifesto* goes far to confirm the diversity of the category (and the seemingly general lack of desire on the part of artists to be blanketed together in one fell swoop). As such, I will discuss a number of composers here, alongside their works, who, for the purposes of clarity might be considered to fall under the New Discipline category, but I urge the reader to bear in mind that this is not an aesthetically coherent category.

<sup>&</sup>lt;sup>69</sup> Walshe, "The New Discipline Manifesto."

<sup>&</sup>lt;sup>70</sup> My works are discussed in the following chapter.

<sup>&</sup>lt;sup>71</sup> Dan Tramte, "Cancellation Artefacts Lecture Performance," 2015,

https://www.youtube.com/watch?v=gXVYAa4T5K8.

counteracted by the backward motion of the treadmill. The cancellation artefact here is the walking image: the human figure that goes precisely nowhere. Tramte sets out a number of these in the *Cancellation Artefacts*, a notable example being his use of the glissando flute headjoint in his work i/o (2014).<sup>72</sup> In this work, the flautist performs a chromatic scale with standard fingering, which moves either upwards or downwards, and counteracts this motion by moving the glissando headjoint in the opposite direction, resulting in the "pew pew" effect.<sup>73</sup> This effect directly interfaces with the reading of gesture. Although it may not be clear to the audience the implied pitch trajectory from the fingerings, it is undoubtedly clear to the performer that the notated pitches in this score are prescriptive rather than descriptive, as they are no longer representative of pitches, they simply ask the performer to realise an action. The discontinuity here exists primarily between the performer and the score, and the score and the instrument, as the score intersects output on the part of the instrument, where the performer mediates the result.

Another example provided by Tramte very clearly demonstrates the discontinuity between one performance and its history. Tramte takes a video posted by the New York Philharmonic Orchestra's second trombonist David Finlayson, where he plays the second etude from Rochut's *Melodius Etudes for Trombone* (1928) with a GoPro camera attached to the slide of the instrument.<sup>74</sup> Tramte edits the video in such a way as to negate the changing in pitch (speeding up and slowing down the video) as well as the appearance of the changing of distance from the camera to Finlayson's face, with a dolly zoom effect.<sup>75</sup> Thus, the video interacts with the

<sup>&</sup>lt;sup>72</sup> Dan Tramte, "Dan Tramte - i/o [w/ Score]," inciptsify, 2014,

https://www.youtube.com/watch?v=peG3bPvUdgM.

<sup>&</sup>lt;sup>73</sup> Tramte, "Cancellation Artefacts Lecture Performance."

<sup>&</sup>lt;sup>74</sup> David Finlayson, "Trombone Silliness (Original)," YouTube, 2013,

https://www.youtube.com/watch?v=soDn2puEuL8.

<sup>&</sup>lt;sup>75</sup> Dan Tramte, "Cancellation Artifacts (Dolly Zoom & Playback Speed) Ed. by Dan Tramte,"

YouTube, 2015, https://www.youtube.com/watch?v=7AI6\_tkE3Wo.

historical version—the unedited version—in such a way as to counteract what is expected, resulting in a somewhat uncanny, meme-culture take on New Music.

A particularly common utilisation of discontinuity in composition occurs in the works of composers dealing with the ontological rift between the real and virtual. The real-virtual dialectic is characterised in numerous related applications. At times, it refers to a lack of clarity between what is actually being performed, and what is being transmitted in another means—for example, by loudspeaker. It also deals with the question of what is being performed now, as opposed to what was performed previously, and is being re-transmitted in the moment. The 'virtual' in real-virtual has the potential to refer simply to something that is performed but is not considered a reality in a particular circumstance, or to a particular agent. An example of this occurs when, say, multiple instruments are present in view of the audient—that is to say: able to be perceived—and an uncertainty arises regarding a particular sound, which does not seem to have any specific source, or cannot be delineated from the overall sound.<sup>76</sup>

Johannes Kreidler's *study for piano, audio and video playback* (2011) explores this real-virtual dialectic, blurring the line between what has been performed live and what is part of the audio track.<sup>77</sup> Performed gestures, or pre-recorded sounds that match gestures performed previously in the piece—it isn't clear which—reappear, coalesce, and conflate to create a texture that consistently defies the representation-fact paradigm. There is, sonically speaking, a lot happening, but the sonic busyness of the work only just exceeds the visually-apparent gestural activity of the pianist, bringing about a discontinuity that is constantly shifting, and thus much harder to make sense of. This discontinuity exists at the dialogue

<sup>&</sup>lt;sup>76</sup> For a discussion and example of this, see my work *like speaking into each other's mouths*, attached in the portfolio of this thesis, and outlined in Chapter Four.

<sup>&</sup>lt;sup>77</sup> Johannes Kreidler, "Study for Piano, Audio and Video Playback - Johannes Kreidler,"

YouTube, 2012, https://www.youtube.com/watch?v=eQfc6Qt1oPE.

between performer and performance practice, especially as perceived by the audient.

Similarly, a number of Alexander Schubert's works deal with this real-virtual dialectic in performance. *La Place Tiger* (2009) works to record the acoustic sounding result of gestures performed on a drumkit, temporally displacing and reperforming these gestures in order to build a highly condensed soundworld that, by definition, formulates an impermeable real-virtual mish-mash of sound.<sup>78</sup>

Another of Schubert's works, Codec Error (2017), features a direct mention of continuity in its description, which the composer follows by stating that they are setting this up to play with the linearity—"error-like manipulations"<sup>79</sup> of the performer's bodies as presented in space. The work, hyper-specifically scored in terms of lighting, gesture, spatial positioning, and instrumentality,<sup>80</sup> uses these elements-lighting especially-to create the illusion that the performers are projected visual recordings rather than physically present, actual people. Throughout, this distinction between the real and virtual performer becomes more and more tenuous, resistant to any certainty. Rather than presenting a discontinuity between the historical and the present, as with La Place Tiger, here, still situated in the perception of the audient, it is not a comparison of temporalities. It is a distinct inability to settle the "is it real?" question. In William Echard's discussion of performance, he describes the realisation of performance as "the constant re-pursuit of something that glimmers at the edge of experience, and always retreats after the fact."81 This is the nature of the real-virtual, in my opinion, when used effectively. It evades material perception, but only just. The discontinuity epitomises this glimmer of experience. The audient anticipates a

<sup>&</sup>lt;sup>78</sup> Alexander Schubert, "Alexander Schubert - 'Laplace Tiger' Pt 1 (Percussion, Sensors, Live-

Electronics)," YouTube, 2010, https://www.youtube.com/watch?v=rgOmMHNG2sM. <sup>79</sup> Alexander Schubert, "Codec Error [Ensemble Intercontemporain]," YouTube, 2018, https://www.youtube.com/watch?v=YcwyqVLisAw.

<sup>&</sup>lt;sup>80</sup> Ålexander Schubert, "Codec Error [Light Automation and Player Movement Visualization]," YouTube, 2018, https://www.youtube.com/watch?v=AhCo70FktiA.

<sup>&</sup>lt;sup>81</sup> Echard, "Sensible Virtual Selves: Bodies, Instruments and the Becoming-Concrete of Music."

result and experiences a lack of gratification—a quick flick in a new experiential direction. As soon as the discontinuity has presented itself, it has disappeared. The gesture (and sounding result) cannot be frozen in time, and such, the audient remains in "constant re-pursuit".

What is most salient in the above examples is that the nature of the discontinuity is diverse, aesthetically speaking. It is not bound to a specific aesthetic result, not does it imply a specific experience in musical performance. Rather, it should be understood by composers and performers alike as a device: something to be employed amongst a series of other intended devices in composition and performance, in order to attain a particular effect, whatever that effect may be. It is not a novelty, nor a point of difference; it is undeniably a component of the aesthetic lexicon of New Music.

# 4. Taxonomy and Creative Works

One of the final tasks of this thesis is the development of a taxonomy of discontinuity in practice. I have used metaphorical terms throughout this thesis, in order to elucidate the kinds of processes that underpin the discontinuity and how it exists in relation to the emergent processes that it subverts. Largely, I have settled on these metaphors because they are physical, and as such, not so abstract. Further, they refer to these processes of the assemblage as physical as well; a metaphor that has run throughout this text. In light of this, the taxonomy is decidedly physically focussed, in the spirit of continued metaphors.

I imagine the discontinuity itself in terms approaching the physical. The discontinuity can be understood similarly to water flow in a pipe: the pipe is referential to the processes that direct the flow of cultural content—meanings, representations, and facts—and this content is the water. In its primary state, imagine that the pipe is part of a network of pipes that cause water to flow in a relatively cyclical manner. The water may take a number of different paths, but will flow in such a way that it fills up every available space in the pipe system. At some point within the network of pipes, there is a stopcock. As this stopcock is manipulated by some agent, either animate or inanimate, there is a degree of resistance placed on the water flow, impacting the passage of water and resulting in less water being allowed through. Further into the system of pipes, the water in one of two directions by turning the valve. As the water eventually reaches a point at which it needs to be used for human consumption, the water will be filtered, removing some of the material present in the flow.

Each of these parts of the system that change the flow of water, or the water's makeup itself, represent a discontinuity. For example, the water, as a kind of object-in-flux—physically speaking—is constantly changing *based on the flow*. This is to say that all of the smallest parts that make up what we perceive holistically as 'water'—the molecules—are in themselves undergoing a constant shift in their relation to each other. While perceptually, the water remains the

same characteristically, when we consider the water an object, we consider it as a relation of smaller parts *at a specific point in time*. The water will continue to present as though it is largely unchanged, but it will unlikely ever be precisely the same, considered in terms of the relations between those specific molecules. The flow is what causes these molecules to shift. This idea represents the passage of cultural meaning from one part of the assemblage to another—an interaction between parts. Finally, the pipe is what binds everything together, it is the broadest context within which the flow of water is measured. The pipe is the performance situation, setting up specific cultural contexts for which the molecules are able to interact with one another.

The purpose of this taxonomy is to allow the user to highlight and situate the discontinuity and its state, relative to the various dialogues of the broad cultural assemblage. Additionally, compositionally speaking, the taxonomy and the model allow for the exploration of point within the performed assemblage that can be subverted by discontinuities. As noted previously, this assemblage is a cyclic network of interactions between parts: the body interacting with the instrument to formulate the performer, the performer interacting with performed histories, the instrument interacting with historical resonances, and the audient interacting with the multiple levels of cultural context. Each of these interactions presents a potential site for a discontinuity, insofar as the interaction is a dynamic realisation of a representation-fact linearity—a gesture (representation of sound) and a fact (that sounding result). It is not the parts within the assemblage itself that provide fodder for discontinuity, rather the emergent relations between the parts.

This taxonomy is typological: it is intended to describe the nature of the discontinuity and is formed through the consideration of the dialogue or representation-fact linearity in relation to the agents involved in bringing about the discontinuity. The most obvious example of this is where a performer enacts a particular gesture and some agential factor, situated ontologically (not necessarily physically) between the performer and the audient, results in the audient expecting a sounding result that is different to what actually occurs. It is necessary to consider

the potential for discontinuities to present themselves in situations where they are not clear or even perceptible to the audient. After all, one of the primary conditions of the model of scalable contexts is to disrupt the hierarchical nature of the communication model in performance,<sup>82</sup> in favour of a decentralised and cyclic notion of performance—a performance that favours the momentary and the historical in equal measure and that doesn't primarily reside in the perception of the audient, but might be perceived only by the performers themselves.

It is important to bear in mind that the discontinuity is not always situated between the subject and object in performance. While my interest in the discontinuity in composition was initially focussed on how the representation-fact linearity could be disrupted, resulting in a discontinuous experience for the audient, it is in fact able to be present in the processes of music-making that are not salient to the outside observer. These might include, but are not limited to, situations where a discontinuity exists entirely between the performer's body and instrument, as has been discussed previously regarding discontinuity in notation. Indeed, in shifting the focus from presentational modes of music-making towards participatory music-making, or a music-making that includes numerous performative agents simultaneously,<sup>83</sup> it should be noted that these performed discontinuities also need not be clearly observable by all subjects in the music-making group. An example of this can be seen in the above discussion relating to Kanno's notion of the descriptive versus prescriptive paradigms of notation.<sup>84</sup> Herein, when the performer enacts a particular prescribed gesture—perhaps, for

<sup>&</sup>lt;sup>82</sup> Inskip, MacFarlane, and Rafferty, "Meaning, Communication, Music: Towards a Revised Communication Model."

<sup>&</sup>lt;sup>83</sup> It may be clear to the reader that at this point, very few of the examples given (including work of my own) have been for ensembles larger than two people, and where these have been given, the interaction between various performers has not be discussed at much length. This is intentional, as my first concern was with understanding the model at a relatively small scale. I do note, however, that I do not think these ideas are difficult to apply to larger ensembles, given the roaming nature of the audient in performance. The interactions between performers, and the bringing about of discontinuities in these contexts is an intended project for future development of the concept.

<sup>&</sup>lt;sup>84</sup> Kanno, "Prescriptive Notation: Limits and Challenges."

example, one of Cassidy's tabular gestures in the *Second String Quartet*<sup>85</sup>—the performer is not entirely able to predict the resulting sound. Thus, there is a discontinuity that exists for this performer between their physical input and sonic output, and there is a distinct difference between the degree of perceptibility of the discontinuity for performer and that of the audient.

I offer this taxonomy as a point of beginning in the analysis of live performance, and I present a number of creative works as leverage for exploration and evidence of what *could* be, aesthetically speaking. While I believe that the three types discussed here—prescriptions, resistances, and interruptions—apply to a large proportion of the discontinuities in practice, I concede that there are likely other modes of bending the linkages between gesture and sound, especially if we take into account other formats of musical experience that do not place such a high importance on the liveness of performance.

Finally, as a brief introduction to my creative works, which are discussed below and further detailed in the portfolio component of this thesis, I would like to outline my compositional approach and subsequent process. My interest is in creating music *for and with* people—performers, or otherwise. As such, and given the individual nature of people broadly, I approach composition for specific people, or specific performances with fluidity of material in mind. I tend towards processes that feature collaboration heavily in the development and deployment of works. My scores should thus be considered to be *potential* codifications of what the performance might be, and decidedly not final: throughout the rehearsal and performance process, I continue to welcome input and development of the piece from performers. Sometimes, this results in changes being made to the scores, or initially unintended happenings making their way into my works. Almost every piece of documentation in the attached portfolio deviates from the score in some

<sup>&</sup>lt;sup>85</sup> Cassidy, "Constraint Schemata, Multi-Axis Movement Modeling, and Unified, Multi-Parametric Notation for Strings and Voices."

way, based on the actualisation of the performance, and I do not see this as a mistake or inaccuracy, rather; it is part and parcel of making music with people.

#### 4.1 Prescription

Continuing the water flow metaphor provided above, the first element of the taxonomy is prescription: the filter in the water circuit. This category of discontinuity describes a situation in which the disruption of the flow of content in performance occurs before the performance is enacted. Typically, this will be undertaken by the composer, who will create a system that realises a specific form of this discontinuity within the work before the work is realised in performance. This could be through a specific notation-based practice that brings about the discontinuity, or it may be more clearly systemic-an electronic mediation, perhaps—but most importantly, the discontinuity is intended and fully realised before the performance exists. This is to say that it is not mediated during the performance, and does not present itself in the performance dynamically, but is rather a constant of the performance system. In the language of the flow metaphor, the discontinuity changes the makeup of content flow before the content is flowing. This discontinuity is a precondition to the system: it defines how the system plays out in performance, and may bring with it a series of systemic characteristics. As such, this discontinuity is the least dynamic, insofar as it is a systemic appliqué rather than something that is performatively malleable. Primarily, this form of discontinuity is not directly obvious to the audient, such as when it is prescribed in the score.

An example of this can be seen in my works *a somnolence do dense it seemed to inhibit breathing* and *WET DREAM II*.



#### 4.1.1 a somnolence so dense it seemed to inhibit breathing

Figure 5: Anne La Berge (right) and the composer (left) workshopping the piece. Image credit: Samuel Holloway

a somnolence so dense it seemed to inhibit breathing was written in mid-September 2018, to be workshopped by Anne La Berge and myself. The work exists in multiple versions, but primarily there is a version for and a version without electronics. The work is for two performers, each performing with metal pea whistles, alongside live electronics (MaxMSP) and visuals (motorised visual environment, fans, and an automated lighting system).

The work is, in general, extremely quiet. The live electronics are taking in an audio signal from the whistles and filtering these based on the sonic the states of the mylar sheets. The program outputs a looped sample of a prepared feedback-input guitar amplifier mixed against the whistles, such that the entire soundworld is as close and unchanging as possible. The level of the sample is constantly revised in an attempt to maintain as constant a soundworld as possible throughout. However, there are gradual spectral shifts, as the noisy air flows of the whistles force the sample to change. What results is, again, a soundworld that seems, in a moment-to-moment perception, to be set in an unstoppable state of flux, yet more broadly conceived, time-wise, appears to be simultaneously unchanging in quality.

This work presents a number of discontinuities. I would like, however, to focus primarily on the visuality related to the pea whistles. This work presents a disjunctive gesture-sonic linearity, in that the amount of visual activity does not directly correlate to the amount of sonic attack-point density. The two are in fact almost completely decoupled throughout the work. This is a prescriptive discontinuity, as while the sounds still exist, to a certain degree, as they would be expected to, their presence in relation to each other shifts in the audient's perception, due to the physicality of performing on the whistles.

The whistles themselves present a prescriptive discontinuity from the outset. The score directs that they are never to be blown completely nor allowed to sound as a whistle would likely be expected to. Further, the compositional decisions enacted throughout ensure that there are few chances for this full sounding to occur. Rather, the whistles produce filtered noise-bands that are modulated by the performer's index and middle fingers covering the fipple to varying degrees. Alongside this, the whistle is positioned fluidly between the lips, allowing for the control of how much air flows directly through the whistle and how much flows out the side of the lips. The discontinuity exists here between the expected sonic output of the whistle, as a cultural reference, and what actually occurs. The pea whistle has a number of specific points of reference, culturally speaking. In particular, they are reminiscent of a referee in a sports game: loud, piercing, and cautionary. That the whistle does not sound as expected even once during the nine-minute course of the piece demonstrates the tension-building abilities of the control of the cause-and-effect linearity between visual reference and cultural reference.

## 4.1.2 WET DREAM II

In comparison to the utilisation of the relation between the score and instrument to bring about a prescriptive discontinuity in the above work, I offer *WET DREAM II*, which focusses on the relationships between the scores and performers more generally. This work was written in mid-2018, for electric guitar, lighting-augmented drum kit, and audiovisuals. Initially the work was written to be performed by Jake Church (guitarist) and Justin DeHart (drumkit), who gave the work its premiere in Nelson, New Zealand. Subsequently, the work was performed as part of the proceedings of the 2018 Australasian Computer Music Conference, by Jameson Feakes (guitar) and Ben Stacy (drumkit) in Perth, Australia, December 2018.

WET DREAM II draws on a number of specific cultural references. The work is generative, and was developed from the spectral analyses of approximately fifty YouTube videos. These videos were all picked for their use of superlatives in the title: "best"/"craziest"/"most epic" "drum solo"/"guitar solo" "of all time"/"ever" "!!!". A variety of searches yielded the videos, which were then fed into a purposebuilt analysis patch in MaxMSP. From here, following various forms of analysis, a meta-drum and guitar solo<sup>86</sup> was created. Notation for these solos were fed in real-time to the performers, via separate score delivery systems. The guitarist's score is an animated, tablature-style score, which is generated in real-time. The score is hyper-saturated with information, and presents the performers with a performative impossibility. The drum score is fed to a system of LED strips attached to the individual drums. These strips, controlled by a custom printed circuit board, are controlled by MOSFETs which are manipulated by an Arduino.<sup>87</sup> The Arduino receives serial data from MaxMSP, causing the lights to switch on and off, presenting the score. This score, however, is not an impossibility. Rather, the drummer is instructed to improvise in a heavy rock-style, and to base their improvisations on the lighting system. This system presents the audience with something of an impossibility: their attempt to formulate meaningful cause-

<sup>&</sup>lt;sup>86</sup> Or, to be more technically correct, a duo formed by two concurrent solos.

<sup>&</sup>lt;sup>87</sup> Arduino, "Arduino — Home," 2019, https://www.arduino.cc/.

and-effect relationships between the lights and the drummer, without any definitive relationship ever presenting itself.



Figure 6: Suggested stage diagram for WET DREAM II

There are a number of discontinuities herein. Firstly, the guitarist is presented with an impossibility: they are physically unable to perform the score perfectly. There is thus a discontinuity between the intent and the realisation. This discontinuity is prescribed, with the filter being the physical ability of the performer. There are only a certain number of events that are able to be achieved successfully during performance, and that number is considerably low compared to the number of events intended by the score. Thus, the physical and mental facilities of the performer define which intended events are realised. Secondly, there is the discontinuity between the drum score (which is visible to the audience) and the audience's formation of understanding of the score's role in the piece. The score presents something of a karaoke-keyboard, Guitar Hero-style reference. Supposing a potential and initial understanding of the lighting from the perspective of an audient, the score presumably presents some form of intentionality. The score exists, and thus one assumes that its being chosen to be visually present implies that it bears some meaning upon the performance. The causality, however, is not a simple linearity. As such, the score also acts as a filter between the performer's intentionality and the audience's understanding of the musical tension the lighting creates.

In a broader context, the guitarist and drummer engage in a suspended caricature of the classic drum/guitar solo. The work, from start to finish, is practically one dynamic—loud!—and the performers appear to be improvising much of the time. The instruments themselves carry the historical resonances of rock music, as do the gestures they inevitably perform on the instruments throughout the piece. Gesture is stretched into multiple time-scales, wherein the microlevel of gesture comprises continuous riffs, while the meso- and macro-levels of gesture are far more gradual: slow moves up the neck for the guitar or progressions from predominantly darker to brighter sounds. Every now and then, these gradual gestures fracture and revert to their initial state. Furthermore, these microlevel gestures are almost completely inhibited by the sheer noise of the piece. The guitarist's playing is directed through a constantly shifting yet completely washedout pedal setup-heavy reverb, heavy delay, overdrive, and phasing-and the density of attack-points performed by the drummer pushes their performance further into the territory of texture rather than gesture.<sup>88</sup> The pedal system sits between the guitarist's gesture and the audient's ability to discern what causes what, and thus filters the gesture. The overall noise creates a disconnect between what is seen and what is heard, similarly presenting the audient with an impossibility: a completely saturated, sonically static yet gesturally dynamic noise wall, in both the aural and visual senses of the term.

Both of the works above, as discussed, highlight the prescriptive discontinuity in practice. What is important to note, and what arises from the counterpoint between the two, is that the presence of a prescriptive discontinuity, while always

<sup>88</sup> Smalley, "Spectromorphology: Explaining Sound-Shapes."

systemic, is not necessarily an altogether-new system applied to the performance situation. While this is the case in the score in *WET DREAM II*, this understanding does not hold true for the application of the performers' intentionalities, or their ability to parse the information that is presented to them. In the case of the guitarist's ability (or purposeful inability) to perform the score, I have employed a system that was already present within the performance assemblage—performer ability—and used the characteristics of this system to bring about a discontinuity. In *a somnolence so dense it seemed to inhibit breathing*, also, the discontinuity is not so much an imposed system, rather a direction focussed on manipulating the characteristics of the instrument. The system *is* the instrument, and it is the system that is being prescriptively managed.

## 4.2 Resistance:

*Resistance* is the stopcock in the above example. This category relies upon mediation during performance. In some ways, this is similar to the idea of the filter in the prescriptive category, although this method is dynamic in realisation, and carries an element of analogue change. It is not a condition of the performance system; rather, it should be seen as a variable quality amongst a number of other variables in the wide parameter space of the performance.

The resistance does not necessarily change the content of the flow, but changes the way the content is flowing. In the metaphor, this is achieved by placing stress upon the system, although it need not to be force-based, nor founded by the application of stress. Context plays a pivotal role in the understanding of this discontinuity in practice, and can be held as the resisting factor.

This form of discontinuity can be seen in my works *like speaking into each other's mouths* and *ICON*.

#### 4.2.1 like speaking into each other's mouths

*like speaking into each other's mouths* was written in early 2018. The work, scored for clarinet in Bb and cello, was performed in Taipei, Taiwan during the Asian Composers League Festival, and was awarded First Equal in the Asian Composers League Young Composers Competition.

Taken directly from the programme notes, *like speaking into each other's mouths*...

presents a situation where the performers attempt to unify their sounding actions, only to be betrayed by their own physicality. The exists at the point of departure between cause and causality, where each performer is simultaneously the initiator and receptor, suspended in a feedback loop in a constant effort to adapt.

The discontinuity here lies within the performers' attempts to unify their sounding actions between one another. The performers are directed in the performance notes to try as much as possible to match their tone and timbre, in order to blur the boundaries between the two instruments as much as possible. Furthermore, the instruments play microvariations of the exact same melodic line throughout the entirety of the piece. Throughout, the performance techniques chosen were intended to undermine any sense of cause-and-effect. One particular instance of this occurs in bar 36:



Figure 7: bar 36 of the cello part of like speaking into each other's mouths

Here, the cellist moves their fingering position from very low on the string to very high on the string rather quickly: this entire passage is articulated on the C string. There is a disproportionately large gestural shift in the hand, from the bottom of the string to the top, and yet there is virtually no change in the sound. The resulting note remains the same, the timbre is relatively similar—only slightly brighter in sound. For a moment, the timbre of the cello is distinguishable from the clarinet, which is playing the same pitch, but quickly, the two fade back into each other's sounds.

This work, for both instrumentalists separately, has the effect of disrupting the dialogue between the performer and the score in the first instance. The discontinuity exists between what is asked of the performer gesturally, and what will actually result in a perceptible difference or cause-and-effect chain for the audient. Thus, a discontinuity also exists between the score and the audient. Finally, a discontinuity exists in the dialogue between the performers and the audient. The gestural significations of change or expected change in sounding result are disproportionate, given the more externally physical nature of performance of the cello. Each of these discontinuities are prescribed completely: they are fully intended by the performers, and codified within the notation of the score, but should not be confused with a prescriptive discontinuity, as they are dynamic, rather than systemic.

#### 4.2.2 ICON

*ICON* is a piece for trombone, video and live electronics, written in mid-2018. The work features a number of components, each of which will be individually discussed: the score and the instrument, the video, and the live electronics, which feature an LED frame.



Figure 8: still image from the video of ICON, featuring the LED frame. Image credit: SOUNZ Centre for New Music The score and instrumental techniques present a completely codified discontinuity: they are directed by the score. Throughout, the trombonist is instructed to perform a variety of physical gestures that imply changes in sound, yet in reality affect the sound very little such as extensive use of employing position changes while maintaining the same pitch. This follows a similar method to the cello example given regarding *like speaking into each others' mouths*. The work also employs a large amount of flutter-tonguing through the instrument without buzzing, while moving the slide. This begins the work, in an attempt to subvert conventional trombone performance practice. Gradually, as the lips begin to buzz and more pitched material is performed, the sound of the instrument begins to melt, various gestures bleed into one another, creating a fluid and amorphous sound object. Over the course of the piece, the connection between high and low pitches and physical positions is broken down, to the degree that gesture becomes the primary factor in creating energy and sound becomes a secondary result.

Another example of this gesture-sound discontinuity exists at the climax of the trombonist's part. The trombonist changes their slide rapidly, indicating presumptuously a change in pitch. However, as such a high partial is being used, the pitch remains static, with the notable trombone "pew-pew" effect, similar to that discussed in Dane Tramte's i/o.<sup>89</sup> This can be seen in the extract below, in bars 80–81:



Figure 9: bars 79–83 of ICON

<sup>&</sup>lt;sup>89</sup> Tramte, "Dan Tramte - i/o [w/ Score]."

The video and LED lighting components work synergistically to disrupt the flow of information in performance. The LED frame surrounds the performer on stage, with five individually controllable LED strips, two on each side of the performer and one above them. Each strip is able to be either red, blue or white, and its brightness is able to be individually modulated. The audience wears red-cyan 3D glasses, and so their experience of the performer within the frame is one of dislocation. As the lights change, the perceived spatial position of the performer changes slightly, enough to create an incongruous experience. On top of this, above (or to the side) of the performer, there is a projection screen, upon which a previous performance of the work is projected, albeit cut up and manipulated. This projection presents the spatially disjunctive lighting as well. Metaphorically, or perhaps conceptually, this forces the audient to question their perception of the performer in space, playing on the real-virtual dialectic. In practice, however, the effect is such that it saturates the audient with visual stimulus-stimulus which presents a somewhat uncomfortable and seemingly disingenuous image of the performer. There is a fight throughout for attention, as the audient attempts to make sense of what is happening.

#### 4.3 Interruption:

Finally, *interruption* is the most radical of all discontinuities. Interruption, in the above metaphor, is the three-way valve. It is dynamically mediated and serves to redirect the flow of content in performance. This redirection could be considered a subset of *resistance*, in that it manipulates the linkage between representation and fact, but the *interruption*, in practise, achieves a complete fracturing of this linkage. The difference here between resistance and interruption, in the complete redirection of the linkage, lies in the complete lack of ability to reconnect the representation and fact. This is to say that they might almost be considered not to be linked at all. This is in fact the case, perceptually. They have been ontologically fractured. This is exemplified in my work *the way a smile fades*.

#### 4.3.1 the way a smile fades

*the way a smile fades* is a performance installation that was exhibited at MEANWHILE Gallery, Wellington, New Zealand in June–July 2018. The work is documented on the gallery's website.<sup>90</sup> The work comprises a violin and a carjack placed alongside each other in a frame. Each day, the threaded rod running down the middle of the jack is turned one complete revolution, crushing the violin incredibly slowly. The installation was situated in the window of the gallery on street level, on one of Wellington's main streets in the central business district. The hope was that pedestrians would begin to form something of a relationship with the installation. There is something clearly precarious about the semiotic pairing of a car jack and a violin: the violin is almost certainly going to be destroyed, and yet, this destruction was so expanded that it almost barely actually occurred. This is not to say that the violin did not eventually completely split apart; rather, the process of un-becoming was so slow that it was incredibly difficult to track, even for those with repeated exposure to it.



Figure 10: in situ image of 'the way a smile fades Image Courtesy: Marcus Jackson

The discontinuity exists here between the gesture of the 'performer' and the audient. The performer in this case is the gallery attendant (or attendants, in this case) who would turn wind up the car jack once a day. For the large majority of

<sup>&</sup>lt;sup>90</sup> MEANWHILE Gallery, "MEANWHILE | THE WAY A SMILE FADES," 2018, https://www.meanwhilegallery.com/the-way-a-smile-fades.

audients, this performer was unseen—the attendant would typically do this at the start of the day—and so, those who engaged repeatedly with the work were left with the presumption that the car jack was being increasingly wound with little proof of this occurring. This is exacerbated by the fact that the physical change in state of the violin was so gradual, that this could not be relied upon to accurately prove the input from the attendant. The discontinuity thus exists, also, between current and past versions of the object. The violin exists in a semi-virtual state: neither in flux nor static, and indefinably one or the other. This is a bifurcation of state, and so this is an example of mediated discontinuity. The mediator is situated between the object and the audient—in this case, the performer is the mediator—and they cause a rupture in the expected flow of the work.

We must also consider the sound in the above work, for there is indeed a sonic product. The gesture of winding the jack produces cracks and creaks, none of which are audible to the audient. These cracks do not just exist at the time of winding either, as the violin disperses the force from the car jack throughout itself over time, these sounds occur. There is, thus, a second interrupted discontinuity present here, between the installed assemblage and the audient. The context of the installation—it being silenced behind a wall of glass—interrupts the transmission of sound from the instrument to the audient.

#### 4.4 Beyond the taxonomy

As I mentioned earlier in this chapter, I concede that this taxonomy likely does not catch all situations of the discontinuity in practice. As a summary, I would like to re-state the scope of this thesis: I am primarily focussed on the discontinuity in live performance. As such, the discontinuities and their types that are presented here all exist within a particular paradigm of performance, and further, all exist within a relatively niche subset of musical expression: New Music. In spite of this, I maintain that this taxonomy is not only useful for the analysis of my own works, but is also applicable to the work of many others, both within and beyond New Musical practices. Further, a number of the examples given here are direct; onthe-nose. They are clear cases demonstrating the use of discontinuity in composition. I look forward to continuing to develop this taxonomy as divergent discontinuities come to light, and hope that, at the very least, this chapter offers a point of departure, academically speaking, from which to delve further into the inner workings and affordances of the vectors of meaning within performances, however conceived. In particular, how these vectors might be made to flow in new directions. As this theory is built upon, there will undoubtedly be a conceptual development in the deployment herein.

# 5. Conclusion:

Music isn't about sound in the same way that novels aren't about phonemes and soccer isn't about gravity.

Twitter user @composeradvice posted the above statement in August 2018.<sup>91</sup> At the time, I will admit, it hit me with the force of what seemed to be an unprecedented relevance in my practice. It was a thought that had been floating around in my mind for a while: the notion that music was no longer about sound, or that, at the least, my interest in music was not about sound. My interest, I had thought, was in gesture and visuality, and my goal was to realign visuality and gesture *alongside* sound. Yet somewhere in the process of seeing this statement, and having this moment of epiphany, I was forced to reconsider. Compositionally speaking, I was interested in sound, yet more specifically, my interest was in how sound was able to extend beyond the technical and aesthetic domains of music, and how the work that I was doing-which at times feels somewhat nicheinterfaces with a wider cultural whole. I still agree with @composeradvice's statement, although, I think it should be discussed further. Music is not about sound, but it is *largely mediated* through sound-producing practices. In the same way, soccer is not *about* gravity, but the game itself is *mediated through* the physical processes of gravity in action. This is to say that while these things are not explicitly about the laws and processes that govern their realisation, they are undoubtedly influenced by the unfurling of these processes. Soccer would be much different if gravity were merely an intermittent influence. And while music depends largely on the production and transmission of sound and sound-related thought, at the same time, it depends on the ways these transmissions are understood. Understanding is contingent upon the network of rules and practices, and the ensuing collective memory-culture.

<sup>&</sup>lt;sup>91</sup> @composeradvice, "Music Isn't about Sound in the Same Way That Novels Aren't about Phonemes and Soccer Isn't about Gravity.," Twitter, 2018, https://twitter.com/composeradvice/status/1027161476312838145.

Music is therefore both about sound and the way sound interacts with culture, as well as the way these interact with the audient. How these interact with the audient depends on how the audient has historically interacted with these, and how these have developed over time, through their own reflexive historical interactions. It is clear that the formation of meaning as emergent from musical experience is a complex network of feedback loops and vectors of influence; dialogues and other circularities. The linearity of the cause-and-effect chain, or the representation-fact paradigm, the two being one and the same, should be considered to be curvilinear, spiralling forwards, and multiscalar.

## 5.1 Model of Scalable Contexts and Taxonomy

The model of scalable contexts facilitates the conception and understanding of information flow in musical performance. Based on the idea of the assemblage, the model is non-structured, non-hierarchical and most importantly, it is temporally and spatially un-fixed. By definition, the assemblage changes dependent on its constituent parts—that crucial idea of emergence—and this fluidity affords a more holistic consideration of the subjectivity of musical experience, and the acquisition of meaning therein.

We need a model of information flow in musical performance that is all of the above: non-structured, non-hierarchical, and temporally and spatially un-fixed, because, to equal measure, these terms can be applied to the relationships within music: between performer and audient, composer and performer, performer and performer, and so on. Music; an ephemeral object-experience, when perceived by an audient—or anyone, for that matter—exists in the moment, but it also refers backwards in history, and lends its references forwards as well. The instance of a ii–V chord progression leading towards the tonic is a salient example here. This being the case, we need to facilitate an assemblage-focussed model for its ability to subvert the hierarchical understanding of information flow in music. Given the nature of the historically individuated audient—that each audient is unique in the system of knowledge that they bring to a performance—we should be able to

conceive of states of information flow in music that are multivalent and offer a number of sites for cultural understanding. Further on, we can consider how these flurries of cultural information can be manipulated to form discontinuities, but firstly, we must flatten the inter-relational ontological plane of performance in culture.

Having created a model that charts the topologies of musical performance, we are able to locate the specific sites of dialogue between constituent parts in the performance assemblage, and thus, are able to monitor the information flow at these points. We can also locate points where the information flows—the points in the network where representation becomes fact—are disrupted. These disruptions engender a discontinuity in the multilinear nature of flow, and, intended or not, bear down on the musical understanding in and of the work. As such, the analysis of these sites of discontinuity becomes important, especially as musical aesthetics increasingly depart from a wholly sound-focussed paradigm.

Herein lies the purpose of the taxonomy, as proposed. The taxonomy of discontinuity types allows for the analytical situation of the discontinuity within the performative assemblage, and further, allows for a consideration of the processes within and surrounding the employment of the discontinuity. In other words: the taxonomy affords us, as composers, performers, and musical thinkers, to broadly qualify and quantify the presence and effect of the discontinuity within that vague network called performance.

## 5.2 Intentions and Further Work

The question "How can I manipulate audience anticipation?", the undercurrent of this thesis, is not new. Indeed, the interrupted cadence, which has been part of the Western tonal lexicon practically since its inception, provides a direct answer you do what is not expected. My hope in formulating the idea of the discontinuity was to add nuance to the question. Now, it has become "how can I *continually* manipulate audience anticipation?" or "how can I *dynamically* manipulate audience anticipation?" It has also changed shape more drastically, to become "how does
anticipation come about?" and "what are the processes of meaning-making in music?" Adding more nuance to the question will add more nuance to the output. After all, the interrupted cadence is precisely what is stated on the box: *interrupted*. It is the most radical category of the taxonomy defined here.

Throughout this thesis, I have relied on gesture to highlight the sites of discontinuities within performance. A particular area of further work, in such an instance, is to explore alternative ways that the discontinuity might be mediated. Further, there is a case for applying the discontinuity to practices other than performance, musical or otherwise.

I would like to think that, in the expansion of this view of the discontinuous in musical experience, we will be able to conceive of novel ideas of what music can be, and how it can be done, particularly within the framework of New Music. In the consideration of different paradigms of cause-and-effect in live performance, both between gesture and sound, and in other more abstract connectivities such as cultural representation and facts, we are able to deepen our conception of what constitutes a meaningful experience. When I say 'meaningful' in regard to experience, I am referring not only to the linkages between gesture and sound, malleable as they may be, but also; I am looking further, towards the experience as a whole, at the micro-, meso-, and macro-levels of time, sound, gesture, and action. While I am not so bold as to posit that this writing will effect such a broad shift, it is my hope that it can be one breath among the metaphorical winds of progress. I sincerely believe this cultural change—gradual, fluid, and constant—is currently occurring, and so, this is my effort to ensure reflexivity in analysis. I would like, more often, for the football not to come down, but to accelerate into space.

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### DISCONTINUITY: a compositional approach to the dynamic decoupling of gesture and sound in live performance

BY

### MARCUS PHILIP JAMES JACKSON

A portfolio of original compositions submitted to the New Zealand School of Music in partial fulfilment of the requirements for the degree of Master of Music in Composition

Victoria University of Wellington 2019

# List of works

### like speaking into each other's mouths

for clarinet in Bb and cello

video: https://www.youtube.com/watch?v=DYXbFadjwT8 score attached

### the way a smile fades

for violin, car jack, and perfomer[s]

documentation: https://www.meanwhilegallery.com/the-way-a-smile-fades score attached

### WET DREAM II

for electric guitar, drumkit, and live-generated scores

video: https://www.youtube.com/watch?v=NoxWIw0rQxU material: https://github.com/mrcsjksn/wet-dream-ii score attached

### ICON

for trombone and audiovisual electronics

video: https://www.youtube.com/watch?v=k9XC8bKOtMQ material: https://github.com/mrcsjksn/icon score attached

### a somnolence so dense it seemed to inhibit breathing

for whistles and audiovisual electronics

video: https://www.youtube.com/watch?v=PfdjUclgeM4 audio: https://www.youtube.com/watch?v=a99fSd9Zcng material: https://github.com/mrcsjksn/somnolence score attached

## like speaking into each other's mouths

for clarinet in B<sub>b</sub> and cello

marcus jackson [2018]

## programme note

*like speaking into each other's mouths* acts as a display of intimacy and awkwardness. It presents a situation where the performers attempt to unify their sounding actions, only to be betrayed by their physicality. The work exists at the point of departure between cause and causality, where each performer is simultaneously the initiator and receptor, suspended in a feedback loop in a constant effort to adapt.

# performance notes

*s.v./p.v./m.v.* – senza/poco/molto vibrato

ord./norm. – cancels any previous performance direction e.g. vib. norm. calls for regular vibrato style
mst/pst/st – molto/poco sul tasto (near the fingerboard)
msp/psp/sp – molto/poco sul ponticello (near the bridge)
overpressure – using a large amount of downward pressure on the bow in order to create a sound with high noise content

*dynamics* throughout should be performed such that the performers achieve maximum blend between the two instruments – it is desired that, as much as possible, it is not clear which instrument is playing which line.

where there are hairpins with no indicated target dynamic, a nuanced swell should occur up one dynamic degree, then returning to the previous dynamic indication.

the performers should not attempt throughout the piece to adjust their *tuning* to a perfect unison with the other performer – there are many instances where either a different fingering or playing style results in a slight detuning, and this is intended. it is, however, desired that the performers are in tune before the piece, as is standard.

emotive/performative guides are given throughout in [square brackets]. these are used to denote a style of playing, and in some instances are used to define the approximate rate of vibrato, or approximate detuning from the perfect pitch of a fully stopped note.

indications in (parentheses) denote a detuning from the perfect pitch where the detuning occurs due to the playing technique (mostly harmonics).

circled numbers in the clarinet part indicate alternate fingerings. these fingerings are shown below:



tempo is fluid throughout. this is shown by upward- and downwardtrending lines connected the various tempo markings through the piece. where the line is straight, there is no change in tempo. there is no line throughout the last page, as there is no change in tempo (although the performers may rubato as they see fit).

performers may contact the composer at any time at: mrcsjksn@gmail.com

### like speaking into each others' mouths

#### for Bb clarinet and violoncello

marcus jackson



\*) half-stopped note (between harmonic and stopped pressure)

\*\*) slap-tongue

\*\*\*) almost completely inaudible

1







































## the way a smile fades [2018] marcus jackson

for violin, car jack, and performer[s]

## score

install a violin inside a frame, with a car jack alongside it ensure that as the car jack is wound, it will crush the violin wind the car jack one full revolution daily

## programme note

It is not possible to unequivocally state where a smile ends, and a lack thereof begins: it does not happen all at once. But it's gradual dissipation is an inevitability, if incongruent with our analogue emotional experience. In our attempts to track these various facial positions and their inscribed emotional signification, the awkwardness of the task becomes apparent—our awareness in this task forces our failure.

In *Haptic sensation and instrumental transgression*, Pedro Rebelo describes the relationship between a performer and their instrument as erotic. He posits that the human-instrument relationship is defined by it's inevitable discontinuity, and the impossible desire to attain one-ness, or transgress the intersubjective 'gulf'. Stephen Davies argues that the reason we can hardly bare violence on instruments is that society offers them honorary humanity. I argue that this fact—this humanization of the musical object—is a hangover from the historical importance placed on being culturally learned. It is a fetish for the historic, a cultural relic we cannot relinquish. It has become necessary to avoid the historicization. Here, the instrument is allowed to become anything but itself, devoid of need for a performer, unable to be heard from behind the glass.

The way a smile fades relies on repeat engagement of the audience. The work begs the stranger to form a relationship with the instrument, and when there is a relationship, there is a desire to track the incongruences between the memory and the reality. Within this empathy, the hostility of the work is undercut. This, ultimately, serves as a metaphor for every situation in life ended too soon, each relationship whose gradual slip was unwanted, yet unstoppable. This work was performed in MEANWHILE Gallery, Wellington, New Zealand by the gallery attendants on 7–29 July, 2018.

My sincerest thanks go to the gallery, and to everyone who engaged with the work, positively or otherwise.

https://www.meanwhilegallery.com/the-way-a-smile-fades



Image credit: MEANWHILE Gallery



for electric guitar, drumkit, lighting, and live-generated score

#### programme note

The first thing I learnt to play on piano was a cover of Celine Dion's 'My Heart Will Go On'. My grandparents had bought me an electric piano, which had keys that would light up, showing you how to play different songs. This song was one of the pre-loaded tracks.

WET DREAM II follows in this line of karaoke performance and electronic pedagogy. The work draws on the history of rock music—specifically guitar and drum solos—in which the performers would riff climactically near the end of a song.

The work is synthesised through the analysis of a database of YouTube videos, all chosen by searching "crazy drum/guitar solo" in the search bar. The audio of these videos is analysed, in a somewhat faulty attempt to create a meta-solo: the craziest rock solo ever, for each of the instruments.

Music pedagogy on YouTube is an interesting area of the internet. A large collection of videos allow musicians to learn the ways of their rock idols, detailing how to achieve various performance styles, both by how you play and what you are playing with. There are a number of tutorials on how to riff in various idioms, and evermore videos describing the instrument and pedal setups of one's favourite performers. Naturally, the result is a large number of videos displaying the output of rock musicians on the internet: a kind of digital show-and-tell.

Somewhere between documentation and caricature, *WET DREAM II* suspends these rock solos by zooming in on their acoustic features and extrapolating them into a considerably longer work. The result is, as performers of the work have noted, a solo that goes on for too long, and then a little longer.

The work should be performed in complete darkness. a technician will be required to execute and terminate the piece, in the MaxMSP patch.

A technical rider and suggested setup is provided in the following pages.

This piece should be incredibly loud, and it may be necessary to provide the audience with ear plugs.

A series of practise videos, with which the performers can play along, can be found at <u>https://www.youtube.com/playlist?list=PLz-6BO\_AqTsrJ6x5Pc3l-ZPVA731kMhVh</u>

#### electric guitar

This work is delivered in real-time to the guitarist through a monitor, which displays an animated **score**. this score presents an impossibility, and as such, the performer should attempt to realise as much as possible of what is displayed on the screen.

The performer should use their typical **pedal** setup, as long as it includes some combination of a delay pedal, a distortion pedal, a pitchshift pedal, and a foot-operated volume pedal. Other pedals may be included in the setup, including multiples of what is already asked for. In this case, the performer should contact the composer to have a new score generated for them, incorporating these pedals. The score will indicate that these pedals be modulated during the course of the piece.

A **tone** should be sought that is similar to a rock style that the performer is fond of. Generally, the tone should be quite distorted and bright, and not resemble the acoustic sound very much. The output on the **amplifier** should be incredibly loud, just below the point of damage for the audience.

The performer is free to improvise within the constraints of their ability to perform as much as possible. Attempting fidelity to the score must at all time be the foremost concern, however. The energy of the performer should be high throughout, and should bounce off of the drummer.

#### drum kit

The score for the drum kit part of *WET DREAM II* is delivered visually, by **LED strips** placed around the circumference of the each drum head. These are individually controllable by the computer, which will live-generate a new **score** with each performance. This score presents a skeleton from which to improvise. The improvisation should be intense and incredibly loud throughout the piece. The energy of the drummer should feed off of that of the guitarist.

The performer may use any **mallet or stick**, as long as the sound is loud.

The LED strips should be attached around the rims of the drums, and around the poles of the cymbals.



*WET DREAM II* was performed by Jameson Feakes (e.gt) and Ben Stacy (kit) during the Proceedings of the Australasian Computer Music Conference, in Perth, Australia, in December 2018.

My thanks go to Jameson and Ben for their immense effort and wonderful openness to experimentation.

https://www.youtube.com/watch?v=NoxWIw0rQxU

The material for the piece, including code for the scores can be found at <u>https://github.com/mrcsjksn/wet-dream-ii</u>



## Technical Rider

- Drumkit (min. kick, snare, two toms, hi-hat, ride, crash)
- Electric guitar (with whammy bar)
- -Two guitar amps (player's discretion)
- -Two volume pedals
- Delay pedal, Fuzz pedal, Overdrive pedal, Pitch-shift pedal, Tremolo pedal (to player's discretion)
- -Two strobe lights, Arduino and Relay Board (to supply)
- Arduino Mega and MOSFET Driver Board (to supply)
- LED System for drums (to supply)
- Computer monitor and appropriate cables (for guitarist's score)
- PC with Max (Version 7.3.3 or more recent) and Processing (Version 3.3.7 or more recent)
- Audio interface with four channel output (with Thunderbolt or USB connection)
- 4 speakers and necessary cables (to audio interface)

## DRUM KIT LED STRIP SETUP



## STROBE SETUP



## SIGNAL FLOW DIAGRAM


### SIGNAL FLOW (ctnd.)



for trombone and audiovisual electronics

Marcus Jackson

# performance notes



positions—here, the performer should still try to maintain a quasi-similar pitch. If it is not possible, for example, the new slide position doesn't have a partial of close pitch, then a be a smooth as possible. At times, this fluid transition is also notated with a line with an arrowhead on the end of it — particularly where split tones are involved. Where there are no noteheads on the mouth stave, it is intended that the performer try and follow the approximate pitch-contours as described visually. Often, there are transitions between slide This notation prioritises fluidity and elasticity in both the slide positions and embouchure of the performer. Where noteheads are joined by lines, the transition between should change in pitch is necessary. The piece is, ultimately, less focussed on correct pitch, than it is in the melting, contorting, elastic nature of the instrument.

On the slide staff, there are typically no noteheads, indicating that transitions between various positions should be as fluid as possible. When there are noteheads, these indicate precise positions on the slide, and should always be followed closely. This is often to ensure that, for brief moments, the pitch language follows a specific trajectory.

sends. That being said, once the performer has learnt the piece. they should send an audiovisual recording to the composer, who will create the video, and fill out the score with The video staff is empty almost throughout—it should be noted that the video part of the score is created pre-performance by the composer, given the material the performer the necessary cues. If the composeris available during the rehearsal process, he will organise this.



transition between various modes of playing) a transition from a diffuse embouchure to a semi-diffuse embouchure (arrow indicates





are also typically accompanied with a specific partial to reach (either above or below). They lip trills are indicated by a trill line and the slide instruction.



transition between the singular note and the upper note — a transition between a regular the arrow at the end of the line indicates a note and a split tone



performer to vocalise that pitch (or the lower

pitch, if this is more comfortable)

the diamond notehead indicates for the

the wavy line is used to indicated a slide trill a rapid trill between two approximate slide positions, resulting in a wavering pitch

# Comportment and general statements:

performance, both in the embouchure and the moving of the slide. It is there should be no dramatic intent in this work—the performer should let the music speak for itself, rather than attempt to be overly theatrical extremely important that the performeaopr appear confident from the direct in their comportment. This should result in a very liquid, elastic Throughout the piece, the performer should be confident, clear, and throughout the course of the piece. It is, however, worth noting that moment they walk on stage. This confidence will appear to unravel

performer should follow the metronome and rhythm here very closely, Psycho Morning Routine section, the video is strongly timed, and the utlise rubato as desrired to give a sense of push and pull in the piece. in order to align with the cuts. Aside from this, the performer should Tempo is generally fluid throughout, however, after the American

Performer experimentation here is crucial, to discover the sound that is The performer should breath as necessary. A lot of breathing is written into the work, with the ingressive (inward) and exgressive (outward) breathing. Here, most of the time, a tremolo or fluttertongue should snoring—loosening the back of the throat and allowing it to vibrate. fluttertongue on the way outward, and inward, is something similar also be used (as notated). This should be an un-voiced, un-buzzed most grotesque, and importantly, loud.

morning routine scene from Easton Ellis' American Psycho. This will be played on the screen, during which time the performer should be as comprises a three-minute video of the composer re-enacting the The aforementioned American Psycho Morning Routine section still as possible.

# Required tech:

Secondary monitor for the performer (to be placed on floor) External sound card, with at least five outputs PC to run system, secondary PC to run video ighting system (composer will provide) One microphone for the trombonist Projector, HDMI cabling Four speakers, cabling



## Video:

The video of the American Psycho Morning Routine–for which the soundtrack of the video is displayed in the score, for the purposes of score-following–will be provided by the composer. It can also be found here: https://www.youtube.com/watch?v=rCio9UBXzSM. I ask that the video not be shared publicly.

The video contains some soft nudity (nothing full-frontal). Discretion is advised.

# Audience:

Throughout this piece, the audience are required to wear red-blue anaglyph glasses. These will be provided by the composer.

The purpose of these glasses is to highlight the nature of the lighting system, which throughout projectsvarying degrees of re/cyan light onto the performer, effectively causing their spatial presence to appear to be being stretched in three dimensions. As this is also recorded and then projected as video, there is an element of the performer seemingly occupying multiple modes of spatiality during the piece.

The lighting in the piece becomes rather intense, and there is some strobing during, so the audience should be made aware of this ahead of time, and given the chance to leave the performance space, should they desire.





MARCUS JACKSON [2018]













N

















# [INTENTIONALLY LEFT BLANK]









a somnolence so dense it seemed to inhibit breathing for metal whistles, fans, audiovisual electronics, and environment

marcus jackson [2018]

### programme note

The title of the work comes from Joan Didion's *South and West: From a Notebook.* 

"A somnolence so dense it seemed to inhibit breathing hung over Hattiesburg, Mississippi, at two or three o'clock of that Sunday afternoon. There was no place to get lunch, no place to get gas. On the wide leafy streets the white houses were set back. Sometimes I would see a face at a window. I saw noone on the streets."

The work is, throughout, restrained yet unyielding. Every push has an equal pull, and there should be a feeling throughout that the sound is on the cusp of dissipating—that it never quite actualised.

### performance notes



The score is notated in time-space notation. The numbers up the top indicate the number ot seconds to be counted by the performers until the next number. Thus, in the first system, the first action occurs, followed by 20," until the second event (fan activations, in this case).

The performers will wear discrete earphones, which will deliver a click, to facilitate the performance. The first beat in each set is higher in pitch that the others.

The stave is such that the breathing and whistle manipulation are decoupled. The staff with the "B" clef indicates breathing. The top line indicates and outward breath, and the bottom line indicates an inward breath. The second staff is the whistle. The noteheads (described below) are positioned from high to low. The highest position indicates a maximum air breath pressure, the lowest indicating minimum air breath pressure. The lowest staff—"F"—is the fan, one of which is operated by each performer. These turn on and off the fans, and aid the score following in the electronics. The low line indicates the fanshould be on, the upper line indicates that it should be off.

The shading on the whistle staff indicates the positioning of the whistle relative to the mouth. White indicates that the whistle should be held barely touching the lips, so that a lot of air escapes. The darkest indicates that the whistle should be completely in the mouth.



Fluttertongue into the whistle

Multiphonic (outward breath, open fipple, low pressure). This is asking for a less pure tone of whistle, can be achieved by speeding up the air





Μ

Indicates a rapid trill between fully open fipple and fully closed fipple

### Notations

The square noteheads indicate various manipulations of the fipple with either one or fingers. The whistle should remain in the mouth throughout the piece. The bottom of the notehead is closest of the moth, the top is farthest away, as far as the fipple is concerned. Below, the extremes of the manipulations are shown, and there are gradations between these extremes.



The vertical dashed lines and thin lines are present to aid the performer in placing the notation accurately within the beat. Dashed lines are attached to the first beat in any time segment. Thin vertical lines show that two actions are paired, and should occur simultaneously.

The **thick black lines** indicate the amount of breath pressure that should be emplyed. The **thick red lines** indicate the amount of breath pressure to be employed, as well as indicating that the performer should try to transition smoothly between two fipple positions. Where there is no red line, changes in fipple positions should be immediate and un-smoothed.

### IT IS ABSOLUTELY IMPERATIVE THAT THERE ARE NO FULL WHISTLE SOUNDS THROUGHOUT THE PIECE. The dynamic range should not exceed approximately mezzo-piano.

Performers should attempt to be as visually and emotionally still as possible. This piece could be thought of as meditative, although calm does not accurately describe the feeling of the piece. Quietly anxious, perhaps.

### Electronics

The audio and lighting electronics are all automated. The lights will turn on and off during the work, and the audio will self-modulate. The lights should be attached to some kind of relay system that is controllable by an Arduino or similar. Any lights will suffice, and they should be placed in front of or near the mylar.

The performers should be amplified subtly, and sent through speakers situated as close to them as possible. The environment is customised for each performance, however, it comprises walls of mylar that are rustled by more fans. The house lights should be off, and there should be lighting near the performers for viewing the scores, but this should be as minimal as possible.

A technical rider can be provided by the composer—please do not hesistate to contact him with any queries: mrcsjksn@gmail.com. The scores and electronics are supplied at the following URL: <a href="https://github.com/mrcsjksn/somnolence">https://github.com/mrcsjksn/somnolence</a>

### Final words

The work may be performed in a small space with no amplification. In this case, the electronics should be dealth with such that they do not override the natural sound of the whistles. The work may also be performed with no electronics, just whistles. In this instance, the house lighting should still be low/off, and the performers should be subtly lit.

As mentioned, the environment changes with each environment. The general idea is to create some kind of surrounding that works itself sonically into the piece. This is very open, and the composer is open to discussing other ways of achieving this.

a somnolence so dense it seemed to inhibit breathing for metal whistles, fans, prepared guitar amplifier, and motorised environment

























